12-2008

The Effects of Aligning Supplemental and Core Reading Instruction on Second-Grade Students' Reading Achievement

Carla V. Wonder-McDowell
Utah State University

THE EFFECTS OF ALIGNING SUPPLEMENTAL AND CORE READING INSTRUCTION ON SECOND-GRADE STUDENTS' READING ACHIEVEMENT

by

Carla Wonder-McDowell

A dissertation submitted in partial fulfillment
of the requirements for the degree

of

DOCTOR OF PHILOSOPHY

in

Education

Approved:

John A. Smith, Ph.D. Major Professor	D. Ray Reutzel, Ph.D. Committee Member
Sylvia Read, Ph.D. Committee Member	Gary Carlston, Ed.D. Committee Member
Parker Fawson, Ed.D. Committee Member	Byron Burnham, Ed.D. Dean of Graduate Studies

UTAH STATE UNIVERSITY
Logan, Utah

2008

ABSTRACT

The Effects of Aligning Supplemental and Core Reading Instruction on Second-Grade Students' Reading Achievement

by

Carla Wonder-McDowell, Doctor of Philosophy

Utah State University, 2008

Major Professor: John A. Smith, Ph.D.
Department: Elementary Education

The purpose of this study was to investigate the effects of aligning supplemental reading instruction with core classroom reading instruction on struggling second-grade students' proficiency in phonics, fluency, vocabulary, and comprehension. Alignment was defined as core classroom and supplemental instruction that are congruent in philosophy, goals, instructional materials, instructional methods, student activities, and reading strategies that follow the same scope and sequence.

This study employed a two-group, pre-post true experimental design. Second-grade students ($N = 153$) scoring in the lowest quartile on the fall Dynamic Indicators of Early Literacy Skills (DIBELS) Oral Reading Fluency assessment were randomly assigned to either an aligned or nonaligned supplemental reading instructional condition received instruction over a 20-week period. Reading specialists in 11 schools provided the supplemental instruction.

The DIBELS Oral Reading Fluency (ORF) and the Woodcock Reading Mastery-Revised (WRMT-R III) assessments were used to assess student reading growth in phonemic awareness, phonics, fluency, and vocabulary. Each student received one score from the DIBELS ORF and six scores from the WRMT-R III. Seven separate nested analyses of covariance (ANCOVA) were conducted to examine differences in group means at posttest while accounting for nesting of reading specialists within schools. Pretest measures for each of the dependent variables were used as covariates to adjust posttest scores at the end of the study.

After controlling for pretest score differences and accounting for the variance associated with reading specialists nested within schools, statistically significant differences were found favoring the aligned supplemental condition for posttest scores on all measures. Effect sizes ranged from small to moderate, with largest effect sizes being found for vocabulary and comprehension. The results of the study suggest that at-risk second-grade students benefitted from supplemental instruction that is aligned to the classroom core reading program.

(143 pages)

ACKNOWLEDGMENTS

Without teamwork, this dissertation would never have been possible. This collaborative effort involved many people who offered continual support throughout the process. I would like to now honor and celebrate those who were an integral part of conducting this study.

My utmost gratitude goes to my committee members for their consistent insight, guidance, and direction throughout the process. When I established relationships with John A. Smith, D. Ray Reutzel, Parker Fawson, Sylvia Read, and Gary Carlston through a collaborative effort to bring coursework into our district for reading specialists working toward Utah Reading Endorsements, I could never have imagined how much this group of caring professionals would add to my personal growth and development. Through all of the discussions, thought-provoking questions, and challenges that extended my thinking I truly felt that you were all working together as a team for my benefit. I am very appreciative of all you have done for me through the entire process.

For the chair of my committee, John Smith, words cannot express my admiration, respect, and gratitude for all of the guidance and friendship that you have provided. When I began the doctoral program I was unsure of why a doctoral program made sense for me. From private conversations as we wrote a grant together to a conversation I will never forget (that innocently occurred with Ray and Parker), you shared a bigger vision for me. As months passed, I began to more deeply understand what you had first recognized years ago. Working closely with such a caring and brilliant professor during graduate studies has been very exciting and stimulating for me. Your generous offering of time,

encouragement, emotional support, and guidance has not gone unnoticed. Words do not seem to convey the depth of gratitude I feel so I will simply say thank you from the bottom of my heart.

I also want to thank the district literacy coaches and reading specialists for their time and commitment to this dissertation. While I was aware that you are master teachers who work tirelessly to support students with reading difficulties, each of you went the extra 50 miles to make this project a success. You are an amazing group of professionals and I am very aware that without your dedication, extra hours, persistence, and brilliance this dissertation would never have been completed. You have my endless respect. I know that I couldn't work as a team with a better group of professionals as we strive together to promote the reading success of all students. It is awe inspiring to see so much energy and talent in one place. You are all truly amazing!

Thank you also extends to Mary Alice and Linda for their support as I worked on this dissertation. Your understanding and flexibility when I needed it were essential for my success and very much appreciated.

I would also like to thank my family. My mother and father have always supported me, modeling the value of effort and reaching for your goals. They have been by my side through the entire process, offering encouragement, support, and love (and a lot of child care). This dissertation is a tribute to the power of family love, which my parents have generously given. I dedicate this dissertation to you.

To my three young children, I would like to say thank you for being patient while Mommy was occupied working on her dissertation. As I promised, we can now play

mother bear on the ground again! To my older child, thank you for chipping in and giving me much needed perspective when I needed a clear view. Finally, I wish to honor my husband, Leonard. I could not have completed this dissertation without him. You have always been supportive, picking up the pieces so that I could take on this challenge.

Thank you to all—the completion of this dissertation is the direct result of amazing teamwork!

Carla Wonder-McDowell

CONTENTS

Page

LIST OF TABLES

Table Page

CHAPTER I

INTRODUCTION

Purpose of the Study

This study investigated the effects of aligning supplemental reading instruction with the scope and sequence of core classroom reading instruction on struggling second-grade students' proficiency in phonics, fluency, vocabulary, and comprehension. In addition to receiving daily core classroom instruction, second grade students in the lowest quartile on the Dynamic Indicators of Early Literacy Skills (DIBELS) assessment received a daily supplemental reading lesson provided by a reading specialist.

Rationale

Teaching students to read has been described as the most important responsibility of primary-grade teachers. However, divergent beliefs about methods of teaching reading have led educators to provide supplemental instruction for low-achieving students through remedial reading programs, special education programs, and other compensatory education programs that have demonstrated varying levels of effectiveness in raising student-reading achievement (Allington & Walmsely, 1995; Gartner & Lipsky, 1987; Johnston & Allington, 1991). Supplemental reading programs are provided to at-risk students, in addition to classroom core reading program instruction. Unfortunately, supplemental reading programs are often fragmented from core instruction, resulting in two different reading curricula for at-risk students to learn and less instructional time to master either program (Allington & Johnston, 1986). Remedial and specialist teachers

who often provide supplemental reading program instruction tend to operate in relative isolation from the classroom teachers (Johnston, Allington, & Afflerback, 1985), and responsibility for at-risk students is often shifted from classroom teachers to remedial and specialist teachers (McAloon, 1993). Research has found that many supplemental program teachers are not knowledgeable about the reading instruction students are receiving in the classroom (Allington, 1986; Slavin, 1987). There is often little congruence or alignment between the classroom program and the supplemental program with no bridges connecting them. Johnston and colleagues concluded that fragmented reading instruction does not allow students to thoroughly learn and practice a consistent set of strategies and can lead to students forgetting or being confused about some strategies.

Providing reading instruction through two separate reading programs that are not aligned at a conceptual level in terms of philosophy, goals, instructional materials and methods, instructional activities, and reading skills or strategies may result in reading instruction in one setting interfering with reading instruction in another setting. In addition, struggling readers may be confused about the nature of reading skills and how they should be applied (Wilson-Bridgman, 1998). In order to address the issue of nonaligned core and supplemental reading instruction provided to low-achieving readers, Allington and Johnston (1986) suggested that curricular congruence should become an important feature of instruction for students receiving supplemental reading instruction in addition to their regular classroom reading instruction. Curricular alignment is characterized by instruction that is carefully planned and mutually supported in both

supplemental and core reading programs in order to provide at-risk students with consistent content and strategies needed for achieving success in the regular classroom (Senacore, 1987). Through implementing similar philosophies, goals, instructional sequence, instructional materials and methods, student activities, and reading skills and strategies in core and supplemental instruction, at-risk students should receive a "double dose" of aligned instruction that results in "cognitive clarity" (Downing, 1979, p. 5), enhancing at-risk students' ability to learn to read successfully. Recent research findings from the National Reading Panel (National Institute of Child Health and Human Development [NICHD], 2000) have given educators much guidance regarding the essential components of effective early literacy instruction necessary to achieve the beginnings of curricular alignment for all students, including those who are at risk of failure.

Literacy Instructional Components

Research on reading and reading growth over the past 20 years has produced a strong consensus around the essential elements of beginning reading instruction for all students, whether the focus is prevention or remediation. Findings from evidence-based research show dramatic reductions in the incidence of reading failure when explicit instruction is provided in phonemic awareness, decoding skills, spelling, and writing by classroom teachers (Foorman, Francis, Fletcher, Schatschneider, & Hehta, 1998). These instructional elements are necessary but not sufficient to support the small, but significant, number of students who encounter difficulty in learning to read (Foorman &

Torgeson, 2001).

Ensuring that all students become competent readers by third grade is one of the most important tasks of primary-grade educators and is a national priority as evidenced by the No Child Left Behind Act (2001). Although the 2007 National Assessment of Educational Progress has suggested increases in the overall reading achievement of U.S. fourth-grade students (http://www.nationsreportcard.gov), the proportion of students reading below basic levels (> 40%) has not changed appreciably from 1993 to 2005. In the last two decades, evidence has accumulated pointing to deficits in phonological processing as a core cause of poor reading (Fletcher et al., 1994; Foorman, 1996; Stanovich & Siegel, 1994). A growing body of evidence suggests that deficits in this area can be addressed through appropriate training, particularly for students through grade two (Foorman, 1997; Torgeson, 1997; Vellutino et al., 1996).

State-level curriculum guides increasingly contain these essential elements of early literacy instruction and require the use of research-based methods and materials in reading instruction. In the Granite School District, classroom teachers use the *Open Court*® reading program to provide classroom core reading instruction for all students. This program has intervention materials included that are intended to be used by classroom teachers in small-group instruction to support at-risk students, reinforcing what has been taught through whole-group instruction. This core program provides a foundation for teachers to provide instruction in phonemic awareness, decoding skills, fluency, vocabulary, comprehension, oral language, spelling, and writing in their classroom reading instruction.

Classroom teachers have access to the growing body of reading research and yet the number of students at-risk of failure on state and national assessments often suggests that the students most at-risk of failure are often not accelerating to a large enough degree to catch up with their peers and maintain grade-level performance. Classroom core reading programs generally include intervention materials designed specifically for low readers. One problem with these intervention materials is the pacing of instruction. Classroom teachers often find the pacing too brisk for struggling readers to master. This often results in teachers searching to find other instructional methods and materials that may be used to accelerate at-risk students' reading achievement.

Systemic Support for At-Risk Readers

Historically, teachers have implemented a variety of instructional approaches to meet the needs of at-risk students. One approach for supporting at-risk readers is to implement various classroom organizational patterns, in hope that varying student-grouping patterns will improve achievement. An example of this, the Joplin Plan (Powell, 1964), originally used in Joplin, Missouri, grouped students homogeneously across grades and classrooms depending upon each student's reading level. The Joplin plan was initiated with an assessment of student achievement in reading. Next, students were organized into relatively homogenous groups independent of their grade-level classification. Then, students were sent to reading classes during the day where instruction was adapted to their needs. When evaluated, the Joplin Plan was not found to be significantly more effective than the traditional self-contained classroom grouping

approach (Powell).

Interclass grouping of students is a key component of a more recent urban education reform plan to increase the achievement of inner-city students from socioeconomically disadvantaged environments. In a matched experimental study using "Success For All"® (SFA; Slavin, Madden, Karweit, Livermon, & Dolan, 1990) program developers reported that students in an SFA pilot school performed substantially better than comparison school students in reading, and that special education referrals and retentions were substantially reduced. Since that time, a larger set of independent studies involving 260 SFA schools at major demonstration sites have consistently concluded that there is no significant advantage for using the SFA program. In several studies, individual student or cumulative school reading scores declined in SFA schools and there was no evidence that the SFA program did as well as traditional approaches (Pogrow, 2002).

The Federal Title 1 compensatory education program for at-risk students represents a national effort to raise student reading achievement. Funds for compensatory education services in reading were first allocated by the federal government in 1966 through Title I of the Elementary and Secondary Education Act (ESEA). Title I funds are allocated for the express purpose of improving educational outcomes among poverty or low socioeconomic status (SES) populations. Borman and Augostino (1996) conducted a meta-analysis of studies over a 20-year period and reported the effects of Title I expenditures on student reading achievement. Results of this meta-analysis demonstrated that students served by Title I failed to achieve or maintain levels of success comparable to mainstream peers.

Other studies partially explained the limited success of remedial programs. First, there is a lack of alignment among the theoretical, philosophical, and instructional bases of core classroom and remedial reading instructional programs (Allington, 1994). Wilson-Bridgman (1998) found a lack of alignment between classroom core reading instruction using a synthetic decoding base and the Reading Recovery® program (Clay, 1985), which uses a psycholinguistic approach to reading instruction. When arguing for curricular alignment, Allington (1986) stressed the importance of alignment between curricula—what is to be taught, in what order, using which materials, and the method of instruction used to help the students learn the curriculum. He argued when two reading instructional programs are widely divergent, students can develop confused notions of the nature and purpose of reading. The outcome of unaligned instruction according to Allington (1986) shifts the burden from teachers to students to do the challenging work of aligning instruction between programs. The resulting remedial instruction, lacking alignment with classroom core instruction, can often lead to lower amounts of total instruction for at-risk students.

Another form of compensatory education is federally funded special education. Bean (1991) cited two concerns with the lack of alignment between special education reading instruction and classroom reading instruction. First, instructional time is lost when students transition between the classroom and pullout special education settings. Second, Bean expressed concerns over the negative consequences of categorizing students as learning disabled. Finally, Allington (1994) and Torgeson (2004) asserted that special education has failed in its promise to lift at-risk students out of school failure.

Response to Intervention Models

In response to mounting criticism of pullout special education programs, new procedures that emphasize prevention are being implemented to identify students who genuinely need special education. Fletcher and colleagues (1998) argued that the discrepancy model for identification of students for special education is a "wait to fail" approach that did not provide needed education services to students with disabilities until third or fourth grade when interventions have been shown to be less effective. To address this issue, Vaughn (2003b) has developed a three-tier, response-to-intervention (RTI) model to systematically increase instructional time and intensity for at-risk students. In the RTI model, curriculum-based measurement (Deno, Fuchs, Marston, & Shinn, 2001) is used to frequently monitor student progress so that the effect of instructional intervention can be determined in a more timely manner. In Tier I instruction, students receive reading instruction in their regular classrooms. In Tier II instruction, students who do not make adequate progress receive intensive reading interventions provided through supplemental instruction in small groups in their regular classroom from the classroom teacher or another instructor. If progress-monitoring data indicate that a student is not making adequate progress with the combination of regular classroom and supplemental instructional support (Tier I and Tier II instruction), then a more intensive intervention is provided that may include special education services (Tier III).

Instructional Support for At-Risk Students

The instruction that at-risk students actually receive is a result of classroom

organization patterns and decisions about curriculum materials and methods. For example, classroom teachers may be using synthetic phonics instruction materials from a core-reading program's intervention component. Unfortunately, teachers often find that these intervention materials lack the repetition and intensiveness needed to meet the needs of many at-risk students in their classes.

Struggling students frequently receive supplemental instruction provided by a reading specialist, special education teacher, or another instructor. This instruction is often based on supplemental commercial programs such as *Reading Recovery*® (Clay, 1985), *Reading Mastery*® (Adams & Englemann, 1996), *Early Interventions In Reading*® (Torgeson, 2000), and *Early Steps*® (Morris, Tyner, & Perney, 2001). These supplemental programs often have independent research to support their effectiveness. For example, a study conducted by Denton, Anthony, Parker, and Hasbrouck (2004) compared two supplemental programs, *Read Well*® (Sprick, Howard, & Fidanque, 1998) and *Read Naturally*® (Ihnot, 1992). In this study, 51 students in grades 2-5 were tutored for 40 minutes, three times per week for ten weeks. When the two groups were compared, students receiving instruction in *Read Well* ® made significantly greater progress in word identification (fluently reading sight words) than those receiving instruction in *Read Naturally*®. Although many supplemental programs may claim effectiveness for at-risk students, schools must still decide which programs to use and how to use them.

Students attending a Title I school may see several adults each day, all of whom provide instruction using a different instructional program. Each of these supplemental programs may present instruction from a different philosophical framework with different

sequences, strategies, materials, and procedures. An example of how this happens was found in one Granite School District elementary school. A reading specialist and classroom teacher met to plan how they would collaborate using a push-in model. The classroom teacher taught the core reading program to the whole class and used a supplemental program for Tier II small-group instruction. The reading specialist would push into the classroom, double dosing the most at-risk students with an additional small-group reading lesson. The reading specialist was working with a different supplemental program in her additional small-group lesson. As they monitored their instruction, conflicts related to the presentation of skills using different sequences in the core program and two supplemental programs quickly became evident. Questions arose such as, "Should the spelling patterns taught in the core reading program match what was to be taught in the supplemental programs?" "What about sight words?" "Home practice?" It also became evident that students learned sight words from one word list in the classroom core program, but at-risk students were being expected to learn sight words from three different lists in three different programs.

Effective Schools Research

Students attending Title I schools often have lower academic performance, but this is not always the case. Hoffman (1991) summarized research into the practices found in effective schools conducted in the 1970s and early 1980s in the *Handbook of Reading Research, Volume II.* In this review, Hoffman described eight attributes of effective schools that produced strong reading achievement among at-risk students. These eight

attributes were: (a) a clear school mission; (b) effective instructional leadership and practices; (c) high expectations; (d) a safe, orderly and positive environment; (e) ongoing curriculum improvement; (f) maximum use of instructional time; (g) frequent monitoring of student progress; and (h) positive home-school relationships.

While there was a high level of interest in effective schools research in the 1970s and 1980s, schools that produced high numbers of at-risk students with high reading achievement continued to draw the interest of researchers as they sought to identify factors contributing to positive student learning outcomes. Another study of effective schools conducted by Taylor, Pearson, Clar, and Walpole (1999) confirmed that systematic assessment of student progress was significantly correlated with students growth in reading fluency and overall reading performance. They found that classroom-level data provided a form of internal accountability while giving teachers a useful indication of each student's progress through the public sharing of data. School-level communication was positively related to reading fluency and comprehension. Teachers in the most effective schools cited collaboration within and across grades as a reason for their success, making use of a collaborative model for reading instruction. Typically, this meant that instructional support personnel—Title I, reading resource, or special education teachers—went into the classroom for an hour a day to help provide instruction for small, ability-based groups. The presence of a school-wide assessment system also permitted teachers to implement flexible small groups. The collaborative model also allowed schools to utilize teacher personnel in a manner that increased instructional time. Factors such as peer coaching, teaming within and across grades, working together to help all

students, and program consistency were mentioned as aspects of collaboration which teachers valued in these most effective schools. Although curricular alignment was not specifically mentioned in this study, teachers were clearly collaborating closely and using student data to drive instruction in these schools that were beating the odds (Taylor et al.).

School reform initiatives have confirmed the results found through effective schools research. For example, a case study by Strahan, Carlone, and Horn (2003) documented three major changes in school culture that contributed to improved student performance on state-mandated achievement tests. First, teachers and administrators developed a shared stance toward learning that linked values and beliefs into a shared sense of responsibility for each child. Second, stengthened instructional methods emphasize more active student engagement where teachers responded to individual student needs and made learning as active as possible. Third, teachers and administrators developed stronger procedures for promoting data-directed dialogue regarding student progress, measuring their own success based on student learning. Fourth, grade-level planning sessions and site-based staff development featured a process of data-directed dialogue that nurtured changes through the use of a collaborative model. As an administrator that led the Chicago public schools into improved reading instruction, Shanahan (2008) stated:

> Good teaching these days is not that individual. Every teacher matters, but no teacher alone really makes the difference-especially in something complex like learning to read. We need teachers who will do a great job and raise literacy achievement and who will then turn these kids over to another teacher, who will also raise literacy achievement. That is more likely to be accomplished when everyone is doing the right thing. The right thing in this case is complex, because

> there are many things that need to be learned about reading and these things need to be orchestrated into a powerful whole…because of this we need textbooks and systematicaly organized curriculum to better support teachers efforts. That makes sense to me. Teachers who work closely with their colleagues by adhering to the discipline of a shared systematic curriculum are not surrendering their professionalism. They are just better focusing their courage and intelligence on those spects of practice where those qualities will help rather than hinder children. (p. 1)

Once again, although alignment of instruction is not directly addressed in this quote, it is clear that as teachers collaborated around student data and develop an organized curriculum, the level of curricular alighment increased.

In spite of different instructional organizational patterns, compensatory school-wide programs, remedial pullout programs, response to intervention (RTI) programs, various supplemental programs, and core intervention programs provided to at-risk readers, many classroom teachers still struggle to know how to best help their at-risk students succeed. Many teachers often resent the "swinging-door" phenomenon of pullout programs where instruction is interrupted by students coming and going out of classrooms, resulting in fragmentation of instruction for all students (Bean, 2004). The issue of lack of alignment between classroom core reading instructional programs and supplemental reading instructional programs was the basis for this study.

Research Questions

The research questions in this study focused upon investigating the effect of aligning the scope and sequence of skill instruction in supplemental reading programs with the classroom core-reading program on the reading progress of struggling second-grade at-risk students. The study sought to answer the following specific research

questions.

1. What is the effect of aligning supplemental and core reading instruction on struggling second-grade students' ability to use phonics effectively to identify words?

2. What is the effect of aligning supplemental and core reading instruction on struggling second-grade students' oral reading fluency?

3. What is the effect of aligning supplemental and core reading instruction on struggling second grade students' vocabulary development?

4. What is the effect of aligning supplemental and core reading instruction on struggling second-grade students' comprehension of text?

Operational Definitions of Terms

Aligned instruction: Core classroom and supplemental instruction that are congruent at a conceptual level in terms of philosophy, goals, instructional methods and materials, student activities, and reading strategies and that follow the same scope and sequence of skills.

Classroom core reading instruction: Literacy instruction delivered by classroom teachers during the language arts block primarily using basal materials. This instruction includes both whole-class presentation and small-group instruction for students.

Explicit instruction: The instructor directly explains and models new skills. Students engage in guided practice to ensure correct application of new skills. The instructor gradually releases responsibility to the student, providing independent practice to verify mastery of the taught skill.

Instructional intensity: Increased instructional frequency and duration, along with decreased group size (usually 3-5 students) for instruction. Lowering group size facilitates increased repetition of student responses to instruction that are focused on identified needs.

Nonaligned instruction: Core classroom and supplemental instruction that does not follow the same scope and sequence of skills and uses varied instructional methods, materials, and activities to teach a variety of concepts.

At-risk students in reading: For this study, at-risk students scoring in the lowest quartile on the fall DIBELS Oral Reading Fluency assessment.

Supplemental reading instruction: Literacy instruction delivered to at-risk students that is in addition to the classroom core reading program instruction taught by the classroom teacher. Supplemental instruction is most often provided by a reading specialist, special education teacher, or another specialist to students who have been identified as needing additional instructional support. Supplemental instruction is most often delivered outside the literacy block.

CHAPTER II

REVIEW OF LITERATURE

This chapter provides a review of the literature related to the effects of aligning supplemental reading instruction with classroom core reading program instruction when instructing at-risk students in phonemic awareness, phonics, fluency, vocabulary, and comprehension. Objectives for this review of literature are to:

1. Synthesize the literature examining supplemental instruction for at-risk students.
2. Describe the current state of research regarding aligned and nonaligned supplemental instruction for at-risk students.
3. Discuss the purposes and outcomes of prior studies of aligned and nonaligned supplemental instruction.
4. Draw conclusions based on this information to guide the focus and design of the current study.

Locating the Studies

This investigator conducted a comprehensive review of the literature related to curricular congruence and the alignment of supplemental instruction for at risk readers. This effort included a search of the databases: Academic Premier, CQ Researcher, Digital Dissertations, Education Full Text, ERIC, Exceptional Children, Professional Development Collection, Psychology and Behavioral Collection, Psych Info, Web Science and Wilson Web. The review included a search for the terms “congruence,”

"curricular congruence," "alignment," "alignment, curriculum," "RTI," and "Three Tier Model" and was conducted in the following journals: *Journal of Learning Disabilities, Learning Disabilities Quarterly, American Educational Research Journal, American Journal of Education, Child Development, Childhood Education, Early Childhood Research Quarterly, Educational Psychologist, Educational Psychology, Elementary School Journal, Gifted Child Today, Journal of Child Language, Journal of Child Psychiatry, Journal of Educational Psychology, Journal of Educational Research, Journal of Experimental Child Psychology, Journal of Literacy Research, Journal of Literacy, Journal of Reading, Journal of Reading Behavior, Journal of School Psychology, Journal of Special Education, Learning Disability Quarterly, Phi Delta Kappan, Reading Improvement, Reading Psychology, Reading Improvement, Reading Research and Instruction, Reading Teacher, Reading Research Quarterly, Review of Educational Research, Remedial and Special Education, Scientific Studies of Reading, Teaching and Teacher Education and Written Communication*. Reference lists from retrieved articles were searched for additional sources. Digital dissertations and books were consulted to identify additional information sources. Studies referenced in "RTI" articles within books and dissertations were obtained and examined for curricular alignment. A general internet search was conducted on the search engines Google and Yahoo using the same search terms. Finally, this investigator personally contacted researchers examining RTI to access recent scholarship in this area. Contacted researchers were Richard Allington, Barbara Foorman, Tim Shanahan, Joe Torgesen, and Stephanie Al Otaiba.

Inclusion/Exclusion Criteria

For the purpose of this review, curriculum alignment was defined as a match between the classroom and supplemental instruction curricula in the content, sequence, materials, and delivery of instruction. The following criteria were used for determining whether or not identified studies were included in this review.

1. Studies or dissertations were published in peer-reviewed journals.
2. Interventions were designed for at-risk students.
3. Studies were clearly focused on the response of at-risk students to supplemental instruction.
4. Studies provided descriptions of at-risk student RTIs.
5. Studies described the content of classroom core instruction so that the impact of aligned or nonaligned instruction could be analyzed.
6. Studies included the delivery of both aligned and nonaligned instruction to allow a comparison of the effectiveness of aligning supplemental instruction with classroom core reading instruction.

A general internet search using the terms “alignment, curriculum” and “curricular congruence” revealed 530,000 entries indicating high interest in these areas. The majority of search results for the term “alignment” focused on accountability, testing, standards, and curriculum. Search results for the term “congruence” focused on Title I, compensatory education, remedial education, testing, models of supplemental service, and RTI. In addition, 23 intervention studies, encompassing the years 1966 to June 2000 were located in a research synthesis by Al Otaiba and Fuchs (2002). These studies were

reviewed to identify additional research that examined the effects of supplemental instruction on at-risk students, and also the effects of aligning supplemental reading instruction with classroom core reading instruction.

This literature review found only six published intervention studies that met the criteria for inclusion in this synthesis. While available research provides evidence that providing supplemental small-group instruction and increasing the time allotted to supplemental instruction may allow more students to succeed in reading (Foorman & Torgeson, 2001; Simmons et al., 2007), few studies have explicitly examined the features of instruction that may increase the instructional intensity levels (Wanzek, 2005). Although numerous studies identify factors that accurately identify at-risk students (nonresponders to instruction) and examine the impact of supplemental instruction, very few studies examine the impact the aligning supplemental instruction with classroom core reading instruction. The *Handbook of Reading Research, Vol. III* addressed this topic in the context of remedial reading and stated that "research on the content and construct validity of curricular congruence is sorely needed" (Kenk & Kibby, 2000, p. 683). The first section of this chapter, Definition of Curricular Alignment, gives the author's definition of alignment between classroom core and supplemental instruction for at-risk students. The second section, Content of Effective Reading Instruction, provides a review of the literature describing comprehensive reading instruction that must be made more explicit, comprehensive, intensive, and supportive for at-risk students being given supplemental instruction (Foorman & Torgeson). The research presented in this section was used to determine the content of supplemental instruction for at-risk students in this

study. The third section, Studies Describing the Effects of Supplemental Instruction describes related research conducted in an effort to improve learning outcomes for at-risk students by evaluating the effects of supplemental instruction. Although many studies evaluate the learning that occurs through various forms of supplemental instruction, the study reviewed in this section describes research that examined the effect of several supplemental programs in comparison to the classroom core instruction alone. The fourth section, Qualitative Studies of Curricular Alignment, describes two studies where the authors specifically identified curricular alignment as the research focus. The fifth section, Studies Describing Supplemental Instruction Effects, describes six studies that examined the effects of curricular alignment on at-risk students' learning. The sixth section, Limitations, discusses the constraints of research methodologies and the final section, Conclusions, is a summary of what is known and what further research is needed.

Definition of Curricular Alignment

When curriculum is aligned, reading specialists provide supplemental instruction for at-risk students that follows the same scope and sequence of instruction as the classroom core reading program. Content and methods used in the classroom core provide the foundation for supplemental instruction. Supplemental instruction aligned with the scope and sequence presented in classroom core instruction provides a double dose of specific skills not mastered, targeting individual needs through providing multiple practice opportunities. During supplemental instructional sessions, student-reading skills are assessed frequently so each skill is mastered before additional content is presented.

Content of Effective Reading Instruction

Several decisions regarding content must be made when aligning supplemental reading instruction with classroom core reading instruction. Despite abundant research examining characteristics of effective reading instruction, controversy continues regarding the most effective instructional methods and the role of using meaningful texts vs. controlled texts for practicing reading skills. In response to this controversy Congress commissioned a synthesis of reading research, resulting in a meta-analysis of reading research presented in a report by the National Reading Panel (NICHD, 2000). The National Reading Panel report identified five essential elements of comprehensive literacy instruction that have a research base supporting them as necessary for students to attain competency in reading fluency and comprehension. The five elements are phonemic awareness, phonics, fluency, vocabulary, and comprehension. These five elements have become the foundation upon which comprehensive classroom reading instruction and supplemental reading instruction are based.

There is now a large body of research evidence linking the development of reading skills to phonemic awareness. This evidence has come from studies of normal developing readers and from studies of students with reading disabilities (Adams, 1990). Research has shown that teaching phonemic awareness significantly improves success rates in learning to read (NICHD, 2000) and is one of the top two predictors of how well students will learn to read during their first 2 years of school (Share, 1984). Intervention research provides compelling evidence that phonemic awareness is teachable (Adams, 1990) and that phonemic awareness instruction results in significant gains for most

students (NICHD). Perhaps the most important conclusion about reading disabilities is that they are most commonly associated with deficits in phonemic awareness (Liverman, Shankwiler, & Liberman, 1989). The National Reading Panel (NICHD) cited evidence to support the effectiveness of phonemic awareness instruction, emphasizing the importance of oral blending and segmenting activities for increasing reading and spelling achievement. The National Reading Panel also found that phonemic awareness instruction was effective whether taught in whole-class, small-group, or individual tutoring settings. However, the National Reading Panel concluded that small-group phonemic awareness instruction produced larger effect sizes than individual tutoring or whole-class instruction. In a matched group experiment, Hatcher, Hulme, and Ellis (1994) found that supplemental reading instruction in phonemic awareness resulted in greater gains for 7-year-old struggling readers than instruction in reading or phonics alone. While classroom core instruction does not generally include phonemic awareness instruction for most second-grade readers, this study recognized the importance of providing phonemic awareness activities for students who continue to struggle in reading.

Another essential element of reading instruction identified by the National Reading Panel (NICHD, 2000) is phonics. Instruction that is explicit in teaching letter-sound correspondences, blending of letter-sounds, and the use of rimes to read words improves students' word recognition abilities (Foorman et al., 1998; Snow, Burns, & Griffin, 1998). The National Reading Panel (NICHD) examined 38 studies of phonics instruction from which 66 treatment-control group comparisons were made. The examination led to several conclusions regarding the most effective methods of teaching

phonics. First, systematic instruction approaches make stronger contributions to reading achievement than do approaches providing unsystematic or no phonics instruction. Second, phonics instruction is effective when delivered in whole-class, small-group, and individual settings. Third, students from low economic backgrounds receiving systematic phonics instruction made stronger gains than those receiving less systematic instruction. Therefore, the NRP concluded that systematic phonics instruction is significantly more effective than unsystematic or nonphonics instruction in preventing reading difficulties among at-risk students and in helping to remediate difficulties in disabled readers (Connor, Morrison, & Underwood, 2007; Foorman et al., 1998; Torgesen et al., 1999; Vellutino et al., 1996).

The third essential element of reading is fluency: the ability to read orally with speed, accuracy, and expression (NICHD, 2000). Fluency is important because it facilitates reading comprehension; that is, to comprehend text well readers must be able to identify words quickly and accurately (Shinn & Good, 1992). Samuels (1979) suggested that reading automaticity is essential for freeing cognitive resources to focus on comprehension. Stanovich (1986) explained that poor readers generally read less than fluent readers because of the increased effort required to decode words. One way to develop fluency is to spend much time reading. It appears that the benefit of consuming large amounts of text is that students encounter words in text after text and as a result of encountering the same words repeatedly, words are processed as units rather than "sounded out" (Farstrup & Samuels, 2002).

Research examining ways to improve reading fluency have provided evidence

that explicit instruction is most beneficial (Hasbrouck, Ihnot, & Rogers, 1999; Stahl, Heubach, & Cramond, 1997). The National Reading Panel (NICHD, 2000) strongly supported guided oral reading techniques for promoting reading fluency, concluding that repeated reading procedures had a clear and positive effect on fluency at a variety of grade levels. The National Reading Panel identified a variety of effective guided oral reading instructional strategies that included repeated readings, echo reading, timed readings, assisted reading, and reader's theater. Additional studies have identified positive effects on students' fluency through programs such as Peer Assisted Learning Strategies (Fuchs et al., 2001). When comparing instructional methods for teaching reading fluency, however, Rasinski (1990) found no significant difference between assisted and unassisted repeated reading.

The fourth essential element identified by the National Reading Panel (NICHD, 2000) is vocabulary. Research has identified a relationship between disadvantaged homes and smaller student' vocabulary that directly impacts reading comprehension (Hart & Risley, 1995). The National Reading Panel concluded that vocabulary should be taught both directly and indirectly, incorporated into reading instruction, learned in rich contexts, and should include active learning.

Explicit vocabulary instruction can be provided effectively during supplemental instruction (Brett, Rothlein, & Hurley, 1996). Graves and Ryder (1994) included four components for teaching vocabulary: wide reading, teaching individual words, teaching word learning strategies, and fostering word consciousness. Through wide reading students are exposed to a large variety of vocabulary and this incidental learning accounts

for much growth (Stahl, 1998; Stanovich, 1986). In many instructional settings, teacher read-alouds are used to increase student vocabulary through discussions of concepts presented in the text (Beck, McKeown, & Kucan, 2002; Robbins & Ehri, 1994).

Comprehension, the NRP's fifth essential element, has been described as the essence of reading (Durkin, 1993). The National Reading Panel (NICHD, 2000) found evidence for the effectiveness of explicit comprehension strategy instruction on students' ability to make meaning from text. Intervention research also provides evidence that student comprehension can be improved with explicit comprehension strategy instruction (Duffy et al., 1987).

Research suggests that improvement in student reading comprehension occurs when teachers demonstrate, explain, and model the use of comprehension strategies, and when teachers interact with students about text meanings while reading (NICHD, 2000). Specific comprehension strategies include predicting, activating and building prior knowledge, think-aloud, text structure, visual imagery, summarizing, questioning, comprehension monitoring, and cooperative learning (Farstrup & Samuels, 2002; NICHD). The National Reading Panel also recommended that teachers combine comprehension strategies during reading lessons, and identified reciprocal teaching and transactional reading strategy instruction as examples of multiple strategy instructional methods that can increase reading achievement for both struggling and on-level readers.

While there is ample evidence that explicit comprehension instruction improves student reading ability, researchers continue to focus on determining effective methods for providing comprehension instruction to at-risk students during supplemental

instruction. Elbaum, Vaughn, Hughes, and Moody (2000) compared supplemental instruction that provided word study skills, comprehension strategies, and a combination of the two. It was found that an emphasis on comprehension alone during supplemental instruction produced larger effect sizes in reading comprehension achievement than supplemental instruction in word study alone or a combination of word study and comprehension instruction.

Foorman and Torgesen (2001) found that students at-risk for developing reading disabilities should also be given explicit instruction in the knowledge and skills required for reading words accurately and fluently. They emphasize, however, that word-level instruction should be integrated with explicit instruction in other reading and language skills that are also important for good reading comprehension.

Studies Investigating the Effects of Supplemental Instruction

In addition to research that provides guidance for implementing classroom core reading instruction, many studies have investigated the effects of providing supplemental reading instruction to at-risk students. Although at-risk students most often receive supplemental instruction in addition to core classroom instruction, many research studies give a detailed description of the supplemental instruction without describing the classroom core reading instruction. One major study will be described here due to the insight it gives regarding the effects of providing supplemental reading instruction to at-risk students.

To estimate the effectiveness of providing supplemental reading instruction,

researchers must compare classroom core reading instruction alone with classroom core reading instruction that also includes supplemental reading instruction. Mathes and colleagues (2005) examined the effectiveness of three types of reading instruction on at-risk first grade students. These three types were: (a) classroom core instruction alone, (b) classroom core instruction combined with direct instruction that is aligned with behavioral theory (Carnine, Silbert, Kame'enui, & Tarver, 2004), and (c) classroom core instruction combined with responsive supplemental instruction that is aligned with cognitive theory (Harris & Pressley, 1991).

The study was conducted over 2 years with two cohorts of first-grade students in a large urban school district in Texas. School rankings based on state assessments were used to identify high-quality core classrooms for the study.

Students were randomly assigned to one of three treatment conditions. One hundred fourteen students were placed in the classroom core instruction alone treatment condition. Teachers in this treatment condition provided students with effective classroom core reading instruction that focused on the essential elements of reading. Ninety-two students were placed in the classroom core instruction combined with a direct instruction supplemental intervention treatment condition. Intervention teachers in this treatment used a scripted program to provide direct instruction, presenting simpler skills to be mastered before more complex skills. Ninety-two students were placed in the classroom core instruction combined with a responsive supplemental intervention treatment condition. Teachers in this treatment taught students to use problem-solving strategies through a process of modeling, coaching, scaffolding, and fading (Brown,

Collins, & Duguid, 1989).

Student reading achievement was measured using the Texas Primary Reading Inventory, the Woodcock Johnson III Word Identification subset, the Observation Survey of Early Literacy Achievement, the Test of Word Reading Efficiency, and the Comprehensive Reading Assessment Battery-Revised.

Mathes and colleagues (2005) found that students in both classroom core reading instruction plus intervention conditions outperformed the students receiving classroom core reading instruction alone. With the exception of small but significant differences in decoding ability favoring the direct instruction intervention group, no significant differences on any measures were found between the two groups receiving supplemental instruction. The data suggest that providing supplemental intervention instruction is effective and that there can be flexibility in the method of instruction as long as instruction focuses on essential elements of reading.

The Mathes and colleagues (2005) study had several limitations. First, the assumption that quality instruction was being delivered in the classrooms was formed on a wide range of school rankings with no information as to the theoretical framework that was guiding classroom core reading instruction. Although no differences were found between the supplemental intervention conditions, differences in classroom core reading instruction may have confounded the effects of the interventions. This study was also conducted in non-Title I schools which may affect the transfer of results to student populations with high numbers of students who qualify to receive free or reduced-price meals.

Qualitative Studies of Curricular Alignment

Although Allington (1986) raised the issue of curricular congruence over 20 years ago, recent research focused on at-risk readers has focused on identifying early reading skill deficits that predict future reading difficulty, the effects of instructional group size, and the effects of increasing the amount of time in supplemental instruction. Only six studies that examined the effects of aligning supplemental instruction with classroom core instruction could be evaluated for this literature review based on details provided in the published reports. Two of these used qualitative research methods. Four used quantitative methods.

Wilson-Bridgman (1998) conducted a qualitative case study in two schools to determine the extent to which Reading Recovery was aligned with classroom core reading instruction. This study was conducted in schools serving middle and upper SES neighborhoods and included data gathered through interviews of teachers, principals, and parents. In addition to interviews, two students receiving Reading Recovery were observed and comparisons were made between supplemental and classroom core instruction. There was no information provided regarding the duration of the study. Wilson-Bridgman concluded that there was a large degree of alignment observed and that this was beneficial for the students she was observing. Limitations of this study include the limited number of subjects, the lack of a clear definition of what a "large degree of congruence" means, and how conclusions were reached.

A second study focused on the alignment between the supplemental instruction in a remedial reading class and instruction in core language arts classrooms in a secondary

school (Senacore, 1987). This descriptive study provided a very limited explanation of how the research question was explored. Senacore states that professional development was provided for classroom and supplemental instruction teachers to enhance communication and collaboration. Core classroom and supplemental classroom teachers used the same materials (novels) for instruction, teaching the same reading skills and strategies. Senacore concluded that alignment was beneficial for secondary at-risk students. Limitations of this study include a lack of specific information regarding how instruction was aligned in this study.

Quantitative Studies of Curricular Alignment

Many quantitative intervention studies have focused on the effectiveness of RTI as a means of providing supplemental instruction to at-risk students. The RTI model is a recent method of providing supplemental instruction for at-risk students, by matching the intensity of supplemental instruction to the level of student need (Haager, Klinger, & Vaughn, 2007). In RTI models, classroom core reading instruction is referred to as Tier I. Students who do not make adequate progress within the core classroom (non-responders to instruction) are given supplemental instructional (Tier II) to address individual needs. Examples of this include the University of Texas Model (Vaughn, 2003a), the Iowa Model (Tilly, Reschly, & Grimes, 1999), and the Minneapolis Model (Marston, 2001). A close examination of most RTI studies reveals that the focus is on increasing time and intensity of instruction at a rate dependent upon student response to the instruction. In the majority of studies, alignment to the scope and sequence of classroom instruction is not

evaluated nor even mentioned, with four exceptions. These four studies will now be reviewed in detail.

Although not specifically identified as such, two RTI, 3-Tier research studies specifically addressed the alignment of supplemental reading instruction with classroom core reading instruction. Fulmer, Harty, and O'Connor (2005) compared the effects of increasing levels of intervention in reading for students in grades K-3 to determine whether the severity of reading disability could be significantly reduced. This experimental study ran for 4 years and included 20 teachers in general, special, and remedial education in kindergarten through third grade, with approximately 100 students at each grade level. The students in this study were predominantly white (68%) and 45% received free or reduced-priced meals. Outcome measures included the Woodcock Reading Mastery Tests-Revised-Normative Update (Woodcock, 1998), oral reading fluency (Deno et al., 2001), and progress-monitoring assessments (Good, Simmons, & Kame'enui, 2001). Tier I core reading program support consisted of professional development for classroom teachers and sharing of student progress data between supplemental instruction and classroom teachers during the study. Tier II supplemental reading instruction consisted of additional small-group reading instruction 3 times per week. Tier III supplemental reading instruction, provided daily by research assistants to students either individually or in pairs.

While researchers in this study did not directly mention the alignment of supplemental instruction to classroom instruction, they carefully described instructional content given in supplemental Tier II and Tier III settings in comparison to Tier I,

classroom core reading instruction (Fulmer et al., 2005). In this study, the same word skill tasks as those given in the classroom core during whole-class instruction were presented to at-risk first graders during supplemental instruction. However, instructors carefully controlled the pacing to provide many more practice opportunities for each set of words and for each student. Materials from several publishers were collected and organized to provide similar word-level instruction as in the whole-class, Tier I classroom core reading instruction, but at a more focused and engaged level.

A close analysis of the Fulmer and colleagues (2005) study shows that at-risk students received supplemental instruction that was both explicit and aligned with classroom core instruction. Skills were presented with the same scope and sequence; however, more practice opportunities were provided to increase the intensity of Tier II instruction. This study reported significant findings in several areas. First, Tier II supplemental intervention was sufficient for two-thirds of the at-risk students to successfully return to Tier I core classroom instruction. Second, the rate of student placement in special education in these schools was reduced from 15% to 8%. Third, when following the students into the third-grade year, researchers found that direct early intervention for at-risk students showed moderate to large effect sizes in the levels of student reading skills retained compared to the control group. These results suggest that aligning supplemental instruction with classroom core reading instruction through an RTI model was successful at moving the majority of students struggling with reading up to a level where they were successful in classroom Tier I instruction.

While providing evidence that aligning supplemental reading with classroom core

instruction was effective, the Fulmer and colleagues (2005) study has a severe limitation in terms of determining the effectiveness aligning supplemental and classroom reading instruction. It is clear that supplemental instruction was effective for accelerating the skill development of at-risk students, affirming the findings of Mathes and colleagues (2005). However, in the Fulmer and colleagues study, aligned supplemental instruction was the only treatment condition. There was no nonaligned instruction group to serve as a control. Therefore, it cannot be concluded from this study whether student-reading growth was attributable to the supplemental instruction, to the classroom core instruction, or to some combination of both.

Torgesen and colleagues (1999) examined the effects of one-to-one interventions on the decoding and comprehension skills of kindergarten readers with very weak phonological skills. Students in this study came from a wide range of socioeconomic backgrounds. Students were randomly assigned to one of four instructional conditions: (a) *phonological awareness plus synthetic phonics* (PSAP), which involved explicit instruction in phonological awareness using articulatory cues plus extensive instruction in word study with practice in controlled text; (b) *embedded phonics* (EP), which also provided explicit instruction in phonics but put more emphasis on reading and writing in connected text, along with the acquisition of functional sight vocabulary; (c) *regular classroom support* (RCS); that received direct tutorial support for the reading instruction provided in the classroom core; and (d) *no treatment control* (NTC) group.

Classroom core instruction in this study was "primarily literature-based and guided by a whole-language philosophy, with phonics being taught on an as-needed basis

rather than systematically" (Torgesen et al., 1999, p. 583). Students receiving supplemental instruction were provided one-on-one tutoring in 20-minute sessions, 4 days a week for 2½ years beginning in the second semester of kindergarten. Therefore, students were provided with 88 hours of instruction by the end of the second grade. Instruction was focused specifically on phonemic awareness and decoding with no vocabulary or comprehension included. Teachers in the PSAP treatment spent 80% of instructional time on word level instruction, whereas teachers in the EP treatment spent 43% of time on word level skills.

When comparing across groups, phonemic awareness assessment data showed that the PSAP group outperformed the other groups, who did not differ from each other. The PSAP group consistently obtained the highest results where individual students performed at very close to average levels on word reading skills, however, 24% remained impaired in phonemic reading skills and 21% remained impaired in real word reading ability. Average levels were defined as no more than one standard deviation below their average age on the Word Attack and Word Identification subtests of the WRMT-R (Woodcock, 1998). Although all student comprehension scores increased, there were no significant between-group differences in comprehension. This is not surprising because no treatment conditions provided supplemental instruction.

Another limitation of the study is the time spent teaching word study among the treatments. It may be that students in the PSAP treatment did better purely as a function of the amount of time spent practicing these skills, rather than as a direct consequence of the form of instruction. The results do, however, confirm the benefits of providing

explicit supplemental instruction to at-risk students.

The positive impact of providing explicit supplemental instruction for students receiving a primarily implicit classroom core instruction was also confirmed in two studies examining at-risk students in kindergarten and first grade. The first of these studies was conducted in Australia by Center, Freeman, and Robertson (2001). Within three schools, supplemental reading instruction was provided for at-risk students through Reading Recovery (Clay, 1985). Two theoretically different programs were implemented within the classroom core reading programs at the three schools to determine the impact on learning outcomes of students served with Reading Recovery. The regular core classroom program was described in the study as a meaning-oriented program, where word study skills are taught through literature, using the same theoretical foundation as Reading Recovery. The second classroom program was a "code" oriented program developed by Center and colleagues named School-wide Early Language and Literacy (SWELL). In this program classroom teachers delivered explicit word level instruction. When evaluating the learning outcomes of at-risk students, Center and colleagues found that all Reading Recovery SWELL students significantly outperformed their regular and Reading Recovery counterparts in non-SWELL classes on tests measuring pseudoword decoding, reading connected text, invented spelling, and a standardized reading measure.

Fuchs and colleagues also examined the effect of providing explicit supplemental instruction for students being taught through a whole language, embedded approach, however, Fuchs specifically measured the effectiveness of providing explicit phonological awareness training, with and without a beginning decoding component. In

this study, 33 teachers in eight urban schools were randomly assigned within their schools to three groups, control, phonological awareness training, and phonological awareness training with beginning decoding and practice. At the end of kindergarten, the two treatment groups performed comparably and outperformed controls on the phonological awareness measures. On reading and spelling tasks, the group participating in phonemic awareness training and decoding instruction did better than the other two groups.

While these three studies provide additional evidence to the body of research supporting explicit supplemental instruction in phonological processing and word study for at-risk students, they also identify the impact of explicit supplemental instruction delivered in addition to implicit classroom core reading instruction. A weakness of these studies is that the quality of classroom core reading instruction was described with insufficient detail to clearly evaluate the instruction. Within a context of responsiveness to individual learners, some classroom teachers may provide more explicit instruction than others. In addition, some classroom teachers may use a generalized scope and sequence to guide instruction, where others may not. This variability makes it difficult to align supplemental instruction with classroom core instruction beyond implementing a common general instructional framework.

The conclusions drawn in these studies suggest that curricular alignment may improve learning outcomes for at-risk readers. The conclusions from the descriptive and case study research of Senacore (1987) and Wilson-Bridgeman (1998), however, lacked clarity in the definition of curricular alignment and procedures used and also lack

empirical evidence supporting the conclusions drawn. RTI research may provide direction for educators regarding curricular alignment, however, most recent RTI studies measure the effectiveness of providing increased instructional time and intensity for at-risk students based on need.

In summary, Mathes and colleagues (2005) provided quantitative research evidence that providing supplemental reading instruction improves the learning outcomes of at-risk students when compared with core classroom instruction only. Center et al. (2001), Fuchs et al. (2001), and Torgesen et al. (1999), provided evidence that at-risk students benefit most from explicit phonological and word level supplemental instruction. Foorman et al. (1998) and Connor et al. (2007) provide evidence that at-risk students benefit most from explicit phonological and word level instruction in the core classroom. Center et al. (2001) and Fuchs et al. (2001) provided evidence that explicit supplemental instruction in phonological processing and phonics is more effective than providing an embedded phonics program in classroom core and supplemental instruction for at-risk students. Fulmer et al. (2005) identified significant increases in learning when supplemental instruction is aligned with classroom core instruction. What remains unanswered is the question of how aligning explicit supplemental and explicit classroom core instruction in the essential elements of reading may impact the learning outcomes of at-risk students.

Limitations

The findings of research reviewed in this chapter give clear guidance regarding

the content of reading instruction and are adding to our knowledge of how to better support at-risk students. Evidence is converging around the provision of explicit instruction to support at-risk students as the best instructional delivery method for both classroom core instruction and supplemental intervention instruction. Unfortunately, there is insufficient research available on the effects of aligning supplemental reading instruction with classroom core reading instruction.

Many educators implement commercial supplemental reading programs to support at-risk students. The experimental research that supports commercial supplemental instruction programs for at-risk students often insufficiently describes program design, uses small numbers of participants, does not use random assignment to group subjects, or has validity concerns raised when studies are replicated by independent researchers. Due to these limitations, studies of commercial programs did not meet the criteria to be included in this literature review, although such programs are used widely in schools today.

While the value of explicit instruction is clear, what is not yet clear is the degree to which instruction in phonics, fluency, vocabulary, and comprehension should be aligned between supplemental instruction and classroom core instruction. There is insufficient research to guide educators regarding the alignment of sequence of instruction provided through explicit supplemental and classroom core instruction for at-risk readers.

Conclusions

Research is providing guidance for classroom teachers as to how to provide the best instruction to enable as many students as possible to succeed in reading (Connor et al., 2007; Foorman et al., 1998; Roberts & Meiring, 2006). Research on the 3-Tier Model (Vaughn, 2003b) and RTI (Torgesen et al., 1999) is providing additional guidance for classroom and intervention teachers serving at-risk students. Allington and Johnston (1986) argued that curricular congruence may be the key to the design of effective programs for alleviating school failure. Research on aligning supplemental reading instruction for at-risk students to classroom core reading instruction can create a bridge between regular education settings and supplemental intervention programs. If this bridge is to be built, much research will be needed on effective ways of aligning supplemental and classroom instruction.

CHAPTER III

METHODS

The purpose of this study was to investigate the effects of aligning classroom core reading instruction with supplemental reading instruction on at-risk second-grade students' proficiency in phonics, fluency, vocabulary, and comprehension. The study was designed to answer the following specific research questions.

1. What is the effect of aligning supplemental and core reading instruction on struggling second-grade students' ability to use phonics effectively to identify words?

2. What is the effect of aligning supplemental and core reading instruction on struggling second-grade students' oral reading fluency?

3. What is the effect of aligning supplemental and core reading instruction on struggling second-grade students' vocabulary development?

4. What is the effect of aligning supplemental and classroom core reading instruction on struggling second-grade students' comprehension of text?

Research Design

A two-group, pre-post true experimental design was employed in this study. During the 20-week study, assessments with established validity and reliability were used. The Utah State University (USU) Institutional Review Board (IRB) gave formal approval of this study and all participating students and their families were given a Letter of Information, written in English and Spanish (see Appendix A). The decision to deliver instruction for 20 weeks was based on a synthesis of research showing larger effects for

supplemental instruction lasting 20 weeks or less (Elbaum et al., 2000; Vaughn et al., 2006). Student response in the current study evaluated based on students': (a) ability to use phonics effectively to identify words, (b) oral reading fluency, (c) vocabulary development, and (d) comprehension of text.

Participants

Schools

This study was conducted in 11 schools in a large urban school district in Utah. This district serves a population of low SES and culturally diverse second-grade students. The researcher in this study is the associate director of elementary literacy, with responsibility for supporting literacy instruction in 60 elementary schools, including the 11 participating schools. The district was selected as the site for the study because of a strong, current reading initiative. All schools identified for participation in the study employed a full-time reading specialist to serve at-risk students. All reading specialists employed in the convenience sample of elementary schools in the study had completed 21 or more graduate hours in reading instruction prior to the beginning of the study.

The 11 schools selected for the study used the *Open Court Basal Reading*® program. All 11 participating schools were low-performing schools under the provisions of the No Child Left Behind Act. One school received Reading First funding and all 11 schools participated in a 2-year district Literacy Leadership professional development initiative prior to the onset of this study. Through the Literacy Leadership training initiative, all eleven participating schools received 5 half-days of professional

development focused on the elements of comprehensive literacy instruction for K-2 students. After each of the 5 half-day professional development sessions had concluded, teachers were coached for a minimum of 2 days (for a total of 10 days) in their classrooms by an assigned district literacy coach. Literacy coaches provided assistance with the implementation of skills in the classroom using the *Open Court Basal Reading*® *p*rogram. Teachers also participated in a second year of review and refine training, which included 4 half days of professional development. Instructional sessions focused on the use of data to guide instruction decision making, effective small-group instructional practices, and, as needed, a review and deepening of instruction taught during the first year of training. After each second-year training session, all teachers were again coached by a district literacy coach in their classrooms for a minimum of two visits. It is important to note that all 11 participating schools met annual yearly progress goals established by the Utah State Office of Education the year prior to this study. These data suggest that regular classroom teachers in these schools understood the components of comprehensive literacy instruction using a district-recommended classroom core reading program.

Eleven schools with characteristics representative of elementary schools participated in this study. Demographics varied among the eleven elementary schools selected for participation in this study (see Table 1). Overall, the participating schools served students who were 48% White, 38% Hispanic, and 55% Title I. Participating schools identified an average of 6% of students for special education services (see Table 1).

Table 1

Participating School Characteristics

	School demographics (%)				
Elementary school	White	Hispanic	Other	Special education	Title I
1	76	14	10	3	No
2	35	47	17	7	Yes
3	31	49	20	6	Yes
4	31	52	17	7	Yes
5	76	17	7	7	No
6	27	58	16	6	Yes
7	60	28	11	8	No
8	58	28	14	6	No
9	50	39	12	6	Yes
10	62	25	13	9	No
11	47	47	7	7	Yes
Study totals	48	38	14	6	55

Students

One hundred 53 second-grade students, from 11 participating schools, who showed significant risk for reading difficulties (reading less than 30 correct words per minute on DIBELS) were selected to participate in the study. Twenty students moved during the study leaving 133 students who participated in the entire study. The student sample consisted of 54.9% males, 45.1% females, 44.4% White, 44.4% Hispanic, 3.8% Polynesian, 4.5% Asian, 4.5% Native American, and 2.3% Black. The student sample in the study was primarily drawn from low-income households, with 80.5% of participating students qualifying for free or reduced-price meals. Almost half (45.9%) of participating students were English language learners (see Table 2).

Table 2

Participating Student Characteristics

School	% Male	% Female	% White	% Hispanic	% Other	% Free lunch	% ELL
1	38	63	75	19	6	81	25
2	75	25	25	75	0	75	38
3	56	44	19	69	12	75	69
4	75	25	50	25	25	100	38
5	75	25	75	25	0	75	25
6	25	75	13	75	12	75	88
7	50	50	63	25	12	94	31
8	69	31	56	19	25	94	25
9	38	62	25	75	0	75	75
10	38	63	56	31	13	69	38
11	56	44	31	63	6	69	63
Total	55	45	44	44	11	81	46

With the exception of special education students, all at-risk students were eligible for participation in this study. Special education students served for reading disabilities under an individualized education plan were excluded from the study. English language learners were included in the study and, as a result, 45.9% of the total participating student population qualified for English as a second language support (see Table 2).

The second-grade students designated most at-risk in each of the 11 participating schools were randomly assigned to one of two conditions for receiving supplemental reading instruction: (a) aligned supplemental instruction and (b) nonaligned supplemental reading instruction. In addition to core classroom instruction with the classroom teacher, participating students received supplemental literacy support five days a week for thirty minutes each day with a district reading specialist, for a total of 35-50 additional

instructional hours. To prevent teacher effects from confounding the design of the study, the reading specialist taught both aligned supplemental and nonaligned supplemental groups of four students each in every participating school.

Demographic variables, gender, ethnicity, English language learner status (students with limited English proficiency, and) free and reduced-price meals qualification (an indicator of low SES) between the aligned and nonaligned treatment groups were examined to identify any pretreatment differences between the two groups (see Table 3). Pearson's Chi-Square was used for examination of the non-continuous demographic variables. More male than female students were identified for both the treatment groups. However, there was not a significant difference in the proportion of males and females identified, $\chi 2$ (1, N = 133) = .814, $p > .05$. More Hispanic students were identified for both treatment groups. There were no significant differences for culture or ethnicity between the two groups, $\chi 2$ (5, N = 133) = .469, $p > .05$. There was no significant difference between the aligned and nonaligned group related to the

Table 3

Demographic Information

		Gender		Ethnicity				
Group	*n* (%)	Male (%)	Female (%)	White (%)	Hispanic (%)	Other (%)	ELL (%)	Free lunch (%)
Aligned	77 (53.8)	35 (46.2)	30 (44.1)	26 (50.8)	30 (5.1)	9 (51.4)	37 (48.6)	53 (81.5)
Nonaligned	76 (55.9)	30 (44.1)	33 (48.5)	29 (49.2)	6 (2.3)	28 (45.9)	33 (54.1)	54 (79.4)
Pearson Chi square		.814		.469			.528	.757

proportion of English language learning students $\chi 2$ (1, N = 133) = .528, p > .05. or students qualifying for the free or reduced-priced meal program, an indicator of low SES $\chi 2$ (1, N = 133) = .757, p > .05. This analysis of demographic data confirms the intended effects of random assignment- no significant pretest differences in the demographic characteristics between students in the randomly assigned aligned and nonaligned groups.

A *t* test for independent samples was conducted for the continuous variable pretest, total reading score on the Woodcock *Reading Mastery Test-Revised*® using student standard scores (Woodcock, 1998). The use of standard scores provides an indication of the students' below-average level in total reading ability. There was not a significant difference between the aligned and nonaligned groups on this measure of reading skill (see Table 4).

Since previous research findings from Mathes and colleagues (2005) showed that students who received supplemental small-group intervention performed significantly better than their at-risk peers who received only enhanced classroom instruction on tests of phonological awareness, timed and untimed word reading, passage reading fluency,

Table 4

Woodcock Reading Mastery Test-Revised, Pretest Total Reading Standard Scores

Group	*M*	*SD*	*t*	*p*
Aligned instruction (n = 77)	90.68	7.94	.746	.626
Nonaligned instruction (n = 76)	89.75	7.37		

and spelling, a control group where students did not receive additional supplemental reading instruction was not used in this study.

Classroom Teachers

The Granite School District provided a 2-year, "literacy leadership" professional development program to support teachers in the implementation of comprehensive literacy instruction using *Open Court Reading*® through a coaching model (as described above) prior to the beginning of this study. School reading specialists assigned to each school provided continued support for classroom teachers through collaboration days and professional development, consistent with district-wide initiatives. Since classroom teachers had participated in extensive professional learning with coaching prior to the beginning of this study, additional instructional support specific to this study was not provided for the 42 second-grade classroom teachers.

School-Level Reading Specialists

The Granite School District uses state reading initiative funds to hire reading specialists at each school. To become a reading specialist, elementary or early childhood certified teachers must demonstrate success in teaching students to read as a classroom teacher. To be employed as a reading specialist, teachers must either hold a Level 1 and Level 2 Utah Reading Endorsement or must be working toward these endorsements. To earn a Level 1 Utah Reading Endorsement, applicants must complete seven three semester hour graduate level reading courses and three more courses (including an internship) to earn the Level 2 Utah Reading Endorsement. Through a close partnership

with a nearby university, many reading specialists in the district already hold a master's degree in education. In addition to university coursework, all school-level reading specialists attend extensive professional development provided by the Granite School District. This professional development includes regular in-class coaching by a district literacy coach, collaborative data study groups with other school-level reading specialists, research focus groups, presentations by national presenters, and differentiated district sponsored trainings to address site-specific needs. Through attendance at professional learning sessions, school-level reading specialists continually refine skills in the use of screening, progress-monitoring, and diagnostic data to guide instruction for the at-risk students they are teaching. In addition to refining instructional skills, additional coursework and professional development supports reading specialists as they exercise leadership on the school literacy committee where they develop instructional plans to intensify instruction for all at-risk students.

It is important to note that school-level principals supervise reading specialists, conducting formal and informal evaluations of performance. The associate director of elementary literacy (who is also the primary investigator in the study) provides professional development support for the 70 district reading specialists, but does not directly supervise each specialist's performance. Through analyzing student progress monitoring data during professional development sessions, reading specialists identified a district-wide pattern of slow academic improvement for at-risk second-grade students. Participation in the study was voluntary. Through voluntary participation, the twelve reading specialists who were a part of this study received additional professional

development and materials to support supplemental instruction.

During this study, school-level reading specialists provided instructional intervention services to participating students in both treatment conditions for 20 weeks. The participating school-level reading specialists were experienced primary-grade teachers, holding extensive training in working with students at-risk students, and either met or were actively working toward meeting the standards for reading specialists established by the International Reading Association (IRA, 2004). Sixty-seven percent of participating school-level reading specialists had a master's degree in education, 82% held a Utah Level 1 Reading Endorsement (seven graduate courses) and 45% specialists held a Utah Level 2 Reading Endorsement (three additional classes, including an internship). Reading specialists who did not hold endorsements needed an average of two more courses to complete both endorsements and were enrolled in courses during the course of this study to finish missing coursework. The mean years of teaching experience for all reading specialists at the beginning of the school year was 17.17 and the mean years of service as a school-level reading specialist was 3.8 (see Table 5). Due to this high level of expertise, reading specialists delivered both the aligned supplemental and nonaligned supplemental instruction to participating students in the schools so that intervention teacher effects were not confounded.

Training

Before the study began, participating reading specialists received 28 hours of professional development in instructional procedures needed to teach both treatment conditions. For fourteen hours, a national trainer from Sopris West provided training in

Table 5

Supplemental Reading Instruction Teachers

			Reading endorsements	
Elementary school	Years teaching	Years as a reading specialist	Level 1	Level 2
1	23	3	Yes	Yes
2 [a]	22	3	Yes	No
2[a]	5	1	Yes	No
3	12	3	Yes	No
4	9	5	Yes	Yes
5	23	5	Yes	Yes
6	30	5	Yes	Yes
7	15	2	No	No
8	8	5	Yes	No
9	24	9	Yes	Yes
10	5	4	Yes	No
11	30	1	No	No
Mean	17.17	3.83	Y = 82%	Y = 45%

[a] Two supplemental reading instruction teachers from elementary school #2 participated in the study

the *Read Well*® program, which was used in the nonaligned treatment condition. The training sessions included an overview of the *Read Well*® curriculum and lessons with an explanation of the rationale supporting the program's instructional design. Training involved modeling several lessons with time for reading specialists to engage in guided practice of the lessons. Guided practice lessons during training helped familiarize reading specialists with lesson formats, suggested teacher wording, and lesson materials. The trainer also assessed the integrity of teacher training by observing practice opportunities and providing feedback related to critical lesson components. Prior to conducting this treatment, reading specialists were provided with time to read the lesson scripts and clarify any questions about the *Read Well*® program implementation.

An additional fourteen hours of training focused on aligned, supplemental instruction. The researcher and district literacy coaches provided the training. Although reading specialists had already participated in the Literacy Leadership professional development, additional training for the aligned supplemental instruction treatment provided a review of key instructional strategies for phonemic awareness, phonics, fluency, vocabulary, and comprehension instruction using the *Open Court*® Core reading program intervention materials. This training was provided to ensure a common foundation of understanding with all participating reading specialists.

Although the instructional methods implemented in the aligned instruction condition were the same as those used by the second-grade teachers during whole-class instruction, supplemental small-group instruction allowed reading specialists to carefully control the pacing of instruction and to provide multiple practice opportunities for each student. The training sessions for participating reading specialists included an overview of the curriculum map and lesson plan design (described in detail below). Training involved the modeling of several lessons with time for participating reading specialists to practice the lessons. Practicing lessons during training helped familiarize reading specialists with lesson formats and lesson materials that were provided for the study, including basal intervention materials, supplemental decodable texts, and the *Six-Minute Solution*® (Adams & Brown, 2003). During professional learning sessions, Sopris West trainers and district reading coaches assessed the integrity of participating reading specialist training by observing practice opportunities and providing feedback related to critical lesson components. Prior to conducting the treatment, reading specialists were

provided with time to read the curriculum maps, develop lesson plans, and to clarify questions about the aligned supplemental instruction program implementation.

During the 20-week study, reading specialists also participated in monthly training meetings where they discussed issues regarding the implementation of the aligned and nonaligned treatment conditions. The reading specialists received frequent on-site coaching from district-level literacy coaches to support them and ensure that they understood instructional delivery of both the aligned and nonaligned supplemental instruction. Student progress was discussed at each training meeting and specialists worked collaboratively to analyze student progress data and plan future lessons. At these meetings, reading specialists shared data and effective instructional strategies for each student that was progressing well, and also shared data for each student that was not accelerating as quickly as desired for group analysis and discussion. Any difficulties with study implementation were also resolved at these meetings.

Instructional Materials

Participating reading specialists were each given a classroom set of *Read Well*® and *Read Well Plus*® supplemental instructional materials (Sprick et al., 1998). The materials included all components of the supplemental program including letter cards, student workbooks, plastic coils, text to support instruction (decodable and duet stories), and assessment materials. Homework books from *Read Well*® were also printed and provided for each student in the study.

Within the aligned treatment, all participating reading specialists used the second-grade basal intervention program to guide the scope and sequence of instruction

(Open Court, 2000). Specific skills taught in each lesson of the intervention program were identified on a curriculum map that was written for the study by the primary researcher and district literacy coaches (see Appendix B). A curriculum map was used as a guide for instruction to align supplemental instruction with core classroom content in phonological processing training, decoding words with taught letter sounds, decoding high-frequency words, and fluency practice in decodable text, mirroring classroom core instruction. In addition, a list of vocabulary words, comprehension strategies, and comprehension text-structure skills were identified on the curriculum map, again mirroring the classroom core instructional content. To support reading comprehension instruction, participating reading specialists were given copies of every two-page reading selection included in the basal intervention program for each participating student. Decodable text that was aligned to the scope and sequence of core classroom instruction was copied for participating specialists to use as homework support for students in the aligned treatment.

To support reading specialists in delivering comprehensive literacy instruction that was aligned to core classroom instruction along with ample practice opportunities, the curriculum map outlined not only the scope and sequence of skills presented in the core classroom intervention program, but also identified supplemental materials that were aligned to the basal scope and sequence. For example, to provide additional fluency practice, decodable texts from the first-grade *Open Court*® reading program were aligned to the second-grade scope and sequence on the curriculum map. Reading specialists were given a copy of all first-grade core decodable texts and practice decodable texts from the

basal program for each student. In addition, each reading specialist received a copy of The *Six-Minute Solution, Primary Level*® (Adams & Brown, 2003) to support fluency instruction. Each lesson in *The Six-Minute Solution*® was identified on the curriculum map so that concepts taught were aligned with the classroom scope and sequence of phonics instruction. *The Six-Minute Solution*® and first-grade decodable texts were added as supplements to the second-grade intervention program and second-grade decodable texts because there were not enough texts provided within the second-grade intervention program for students to develop fluent reading. This combination of supplemental materials, along with the second-grade intervention program, provided reading specialists with enough texts aligned to the scope and sequence of instruction to develop reading fluency.

Supplemental instructional materials were also provided for reading specialists to support vocabulary and comprehension instruction in the aligned treatment condition. For example, reading specialists were given child-friendly definitions and pictures of each vocabulary word identified on the curriculum map. Reading specialists also received a copy of the graphic organizers used in the core classroom program for each lesson to support comprehension instruction in text structure. Using the curriculum map, reading specialists were able to provide vocabulary and comprehension instruction that mirrored classroom core instruction using a two-page text from the second grade intervention program

In the aligned treatment, material provided followed the same scope and sequence of skills as the classroom core. To ensure that instruction in the classroom core and

supplemental instruction followed the same scope and sequence of skills, a lesson plan guide was provided for reading specialists use throughout the study (see Appendix C).

Procedures

The fall 2007 DIBELS assessment was used to screen all second-grade students at the 11 participating schools (Good, 2002). Students were ranked from the highest to the lowest priority in each school according to the DIBELS instructional recommendation to identify students who were at the greatest risk of failure. From this pool of students, the lowest second-grade students were identified at each school site. In order to focus on students needing intensive supplemental services, students who had a second-grade oral reading fluency score above 30 were eliminated from the study, ensuring that identified students were in the lowest quartile on this curriculum-based measure.

Once eligible students were identified they were randomly assigned to one of two instructional conditions (aligned supplemental or nonaligned supplemental) using a table of random numbers. Students in the aligned supplemental and nonaligned supplemental research intervention groups were divided within each school into homogenous instructional groups of four students. In addition to instruction with the classroom teacher, all participating students received supplemental literacy support 5 days a week for approximately 80 days (range = 72-100 days) beginning in early November and continuing through late May. Posttesting occurred the week immediately following the conclusion of the 20-week intervention. The DIBELS ORF and the WRMT-R subtests of Word Identification, Word Attack, Word Comprehension, and Passage Comprehension

were administered to all students at posttest as outcome measures.

Description of Interventions

Supplemental Intervention Instruction

The purpose of the reading specialist program is to provide intensive, supplemental instruction for at-risk students so that learning is accelerated to a degree that allows the student to achieve at grade level. Current reading achievement data show that at-risk second-grade students are clearly making gains; however, the gains are not steep enough to enable the majority of students to achieve at grade level. When analyzed, this pattern was evident across the district and did not appear to be impacted by factors at the school level (skill of reading specialist, student factors, etc.). A variety of interventions were implemented by reading specialists and through other reading initiatives; however, the general pattern was prevailing regardless of services delivered. This pattern was also evident at the state level in the criterion referenced test scores. Therefore, it appeared that additional scientific study was needed to more clearly determine the most effective approach to accelerate the learning of at-risk second grade students.

In the current study, aligned supplemental and nonaligned supplemental instruction was provided in addition to the instruction delivered by the classroom teacher for students identified as being most at-risk. When combined with classroom small-group instruction, students at risk of failure participated in small-group differentiated instruction for a minimum of 50-60 minutes (20+ minute small-group session with the classroom

teacher plus a 30-minute small-group session with the specialist). Participating students received supplemental services from the reading specialist in small groups of four students for 30 minutes a day, 5 days a week. The decision to deliver instruction in groups of four was based on a synthesis of research showing no differences in student learning outcomes when comparing 1:3 or 1:4 with 1:1 tutoring (Elbaum, 2000; Torgeson, 2004; Vaughn, 2003a). Supplemental reading instruction provided by the participating reading specialist focused on phonemic awareness, word recognition, vocabulary, passage reading, and comprehension.

Aligned, Supplemental Treatment Instruction

The goal of providing aligned, supplemental instruction was to provide enough intensity and practice of skills presented in core classroom instruction for students to master skills. To reach this goal, the aligned, supplemental treatment matched the scope and sequence of instruction for small-group instruction between the classroom teacher and the reading specialist. Students assigned to the aligned, supplemental treatment received daily comprehensive literacy instruction in the classroom core in a heterogeneous group, following the scope and sequence of the second grade basal program. In addition to instruction provided by the classroom teacher, students were placed in a small group of four students for thirty minutes of supplemental instruction provided by the school reading specialist.

The first fifteen minutes of the aligned treatment provided a second dose of systematic phonics instruction, using the basal intervention program (Open Court, 2000) and supplements. Students lacking phonological processing skills were taught a series of

phonemic awareness lessons from the intervention program (Open Court) for 2-3 minutes daily until oral blending and segmentation skills were established. For the remainder of the first fifteen minutes of instruction students were taught skills at the word level. A primarily synthetic phonics approach was used to mirror classroom core instruction. For example, students were taught "The spellings for the long e sound are ea, ee, e_e and _y. When I touch the spellings, tell me the sounds." Students then used the taught spellings to blend sounds and form words. As students sounded out the word seat, for example, they gave the three sounds (sss eeeee tttt) and blended them into "seat". Dictation was also used to teach spelling, having students segment the word "meat" into its three phonemes, writing the correct spelling for each sound. For example, "how many sounds do you hear in grand? Let's stretch the word, ggg rrr aaa nnn ddd. What's the first sound in grand? Gg Write the spelling…What's the second sound in grand? Write the correct spelling, etc.). Students also used word families to blend words, for example, using the "ack" chunk to read sack, pack, tack.

Although varied activities characterized the word-learning portion of the lesson, blending and dictation activities from the basal intervention guide were used to guide the scope and sequence of word-level instruction throughout the lesson (see Appendix C). Elkonin boxes and physical activity (touch your wrist, elbow, and shoulder for each sound you hear) were used to support the phonemic awareness lessons. Reading specialists explicitly taught blending by writing spellings on a white board as students read. "Toughie Charts" contained lines of practice with spellings, words, phrases, and sentences. The same spellings, words, and phrases were written on sentence strips and

read simultaneously while being passed from student to student in the small group to increase the amount of practice. Word lists controlled for the specific spellings being taught were read orally from the *Six Minute Solution*® (Adams & Brown, 2003) in a repeated reading format. Students kept track of personal progress by keeping records of how many words they were able to read in each 1-minute timing. To provide further oral reading practice, word families were written on cards for sorting activities, which culminated with oral reading of each set of words. Student white boards were used extensively as students practiced writing dictated words from the basal intervention guide. While there was little flexibility provided in what to teach because all instruction was designed to practice skills in the specified scope and sequence of instruction, reading specialists used their knowledge and expertise from reading endorsement courses and district professional development to provide varied activities to bring students to mastery of word study skills.

The second fifteen minutes of daily supplemental intervention instruction provided practice in reading connected text to develop oral reading fluency. Repeated oral readings using decodable texts was the central focus of the second fifteen minutes of daily instruction. During this time, students were given multiple decodable texts that were aligned to the core classroom scope and sequence. Materials included passages from the second-grade intervention program, the basal first-grade practice set of decodables, and passages found in *The Six-Minute Solution*® (Adams & Brown, 2003). The curriculum map provided to each participating reading specialist gave specific direction as to which materials supported the specific skill being taught so that reading specialists could easily

gather a multitude of materials to provide enough practice for students to attain mastery (see Appendix C).

The second fifteen minutes of daily supplemental instruction also included explicit vocabulary and comprehension instruction. To support vocabulary and comprehension instruction, a two-page narrative or expository text mirroring the theme taught in the whole-class, core instruction was presented from the basal intervention program (Open Court, 2000). Pictures of key vocabulary words were presented with child-friendly definitions. To support reading specialists in providing this instruction, a picture library and definitions were provided for reading specialists. The curriculum map was used to coordinate instruction from the basal intervention program with the additional resources. Comprehension strategies taught in the supplemental groups mirrored the strategies being taught in the classroom core. For example, classroom teachers would be teaching from the Kindness theme. Students would be learning to visualize and ask questions as they read the text in the classroom. The use of a Venn diagram was then completed as a class to compare and contrast two characters in the anthology selection. In the supplemental instructional session, reading specialists promoted application of this knowledge with at-risk students in small groups using a two-page selection on Kindness in the intervention program. As students read this new selection on kindness in small group, they practice visualizing and asking questions as the text was read. The reading specialist then provided a Venn diagram to compare and contrast the characters in this new, two-page selection.

In summary, the aligned supplemental program provided instruction in all five

essential elements of reading identified by the National Reading Panel (NICHD, 2000). A systematic, explicit, phonics approach was used in the aligned, supplemental program, which had a scope and sequence of phonics skills that matched the core classroom presentation. Fluency practice included 15 minutes of word work and 15 minutes of reading in connected text each day. Multiple strategy comprehension instruction was provided in text that mirrored the core classroom themes and focus so that at-risk students were given an opportunity to develop additional vocabulary while applying skills taught in less complex text.

Nonaligned, Supplemental Treatment Instruction

The nonaligned, supplemental treatment also provided explicit instruction in all five essential elements of reading identified by the National Reading Panel (NICHD, 2000). The nonaligned, supplemental treatment used the *Read Well* program (Sprick et al., 1998), which delivers instruction through a systematic approach that utilizes a different scope and sequence than what was being used in the core classroom-reading program in phonemic awareness, phonics, fluency, vocabulary, and comprehension.

An example of the nonaligned condition can clearly be seen within the phonics and phonemic awareness instruction. Although both conditions present phonics instruction explicitly, systematically, and synthetically, the core classroom instruction teaches short vowels first while the approach in the nonaligned, supplemental instruction is to teach high utility spellings first, including long vowels early in the sequence. Fluency instruction included 15 minutes of word work and 15 minutes of reading in

connected text each day. The nonaligned condition provided controlled text using sounds and spellings as taught in the supplemental program that was in a different sequence than what had been presented in the classroom core instruction. In the same manner, both intervention conditions included phonological processing skills (oral blending and segmenting); however, the scope and sequence of the classroom core instruction and the nonaligned supplemental instruction were determined by the differing program sequences, resulting in varied activities.

The nonaligned condition provided vocabulary instruction on three key words that would be read in a later selection from the supplemental program for comprehension. Pictures and student friendly definitions were presented, engaging students in learning content words. Students then read the controlled text while the teacher read the non-controlled text in a duet story. The content of the vocabulary and theme were not aligned to the classroom core instruction (different topics, vocabulary, etc.). The nonaligned instruction provided explicit comprehension strategy (i.e., visualizing, making connections) and text structure instruction with graphic organizers, however, the text that was read was not aligned with core classroom instruction (any connection between the vocabulary, strategies being focused on and/or graphic organizers used was coincidental and infrequent).

The purpose of this study was to investigate the effects of aligning supplemental reading instruction with classroom core reading instruction on struggling second-grade students' proficiency in phonics, fluency, vocabulary, and comprehension. In this study, both treatment conditions provided synthetic phonics instruction. Skills were carefully

sequenced from easy to difficult and ample practice was given. Both the aligned and nonaligned supplemental conditions were comprehensive, attending to explicit instruction in phonemic awareness, phonics, fluency, vocabulary, and comprehension. The point of divergence, however, was in the alignment of the scope and sequence of the supplemental reading instruction with core classroom reading instruction. A comparison of the instruction provided in each treatment condition can be seen in Table 6.

Table 6

Reading Intervention Lesson Format

Instructional delivery	Treatment 1: Aligned supplemental instruction	Treatment 2: Nonaligned supplemental instruction
Decoding practice: Word study (15 minutes per lesson)		
Phonological processing	Classroom core program intervention materials; oral blending and segmenting activities.	Read Well; segmenting activities.
Word study: Fluency practice	Classroom core program sequence of skills; sound review, blending, repeated reading of words, sight word review.	Read Well sequence of skills; sound review, blending, repeated reading of words, sight word review.
Vocabulary	Introduce three words from classroom core intervention program that are related to the core anthology selection.	Introduce three words from Read Well text (on a different topic than the classroom core content).
Fluency in connected text and comprehension (15 minutes per lesson)		
Fluency in connected text	Repeated reading in text practicing target spellings from word study in decodable text from core program. Additional fluency practice following classroom core scope and sequence from supplemental resources (Six Minute Solution).	Read Well solo text, practice target spellings from word study, fluency practice following Read Well scope and sequence
Comprehension	Classroom core intervention two page reading selection (narrative and expository), applying comprehension strategies and text structure skill that was modeled in whole group classroom instruction (use of strategies and graphic organizers).	Read Well comprehension strategy and text structure instruction, based on scope and sequence of nonaligned supplemental program

Progress Monitoring

Reading specialists monitored the progress of each student in the aligned supplemental and nonaligned supplemental instruction groups weekly using the DIBELS ORF subtest. This instrument is a narrow measure of the broad skill of reading including the components of word recognition, passage reading, and fluency. The DIBELS Nonsense Word Fluency subtest was used to monitor the progress of students scoring below the benchmark score of 50 correct sounds with 15 words correctly recoded per minute. Reading specialists recorded students' scores each week, assessed progress towards the spring goal of 90 words per minute of ORF and the goal of 50 correct sounds with 15 words correctly recoded per minute on NWF, making instructional adjustments as needed. In addition, specific guidelines were provided to identify when students were to progress in each treatment condition, receiving initial instruction on new sounds and spellings. To accomplish this goal, student assessment results within each treatment were identified as a strong pass, good pass, or weak pass. Prior to presenting new content, participating reading specialists provided additional practice until a minimum of three students received a good pass or strong pass. Using this rubric, clear progress monitoring benchmarks were used consistently across treatment conditions as measures for determining when to move students into the next set of skills (as outlined on the curriculum map or within the *Read Well*® program). Within this framework, reading specialists used multiple repetitions to provide ample practice opportunities for each at-risk student. The goal for participating reading specialists was to provide fast-paced instruction, giving multiple exposures within the scope and sequence of instruction to

reach the intended outcome of student mastery of skills.

Fidelity of Implementation

Six district-level literacy coaches and the primary investigator used a 3-point scale to evaluate fidelity to the aligned supplemental and nonaligned supplemental treatment conditions. The six district literacy coaches and primary investigator conducted bi-monthly fidelity checks to ensure instructional delivery of both the aligned supplemental and nonaligned supplemental conditions. Inter-rater reliability was established on coaches, using the 3-point scale to evaluate each component of the reading lesson format. At the onset of the study, district literacy coaches observed reading specialists with the primary investigator. Interrater reliability was checked for each coach in comparison to the score designated by the primary investigator and inter-rater reliability was established at .91 before district reading specialist coaches began observing reading specialists delivering aligned and nonaligned instruction. In all, 70 fidelity checks were conducted in the aligned treatment and 71 fidelity checks were conducted in the nonaligned treatments.

Classroom coaching, demonstration, and data support were provided by district literacy coaches as needed to ensure that reading specialists fully understood implementation expectations. Assessment data were collected weekly on each student to guide the instructional focus for each small group of students. At monthly reading specialist meetings with the district literacy coaches and primary investigator, DIBELS progress monitoring data were shared and individual student progress was evaluated to further support reading specialists in fidelity of implementation.

The occurrence and nonoccurrence of major treatment components were rated during all fidelity checks, addressing instructional time, content, pacing, and behavior management. Instructional time was measured to ensure students were receiving 15 minutes of explicit decoding instruction and 15 minutes of connected text reading (including vocabulary and comprehension at least one day a week) each day within each treatment condition. Phonemic awareness (if needed), phonics, fluency, vocabulary, and comprehension instruction was observed during each fidelity check. Specialist use of modeling, guided practice, pacing of instruction, and behavior management were also evaluated within both the aligned and nonaligned conditions. The scores for quality of instruction ranged from 0 (not evident) to 2 (evident). The quality of instruction is a composite score that includes the appropriateness of instruction within the specified time blocks. Samples of the aligned and nonaligned fidelity checklists are included in Appendix D.

Tables 7 and 8 provide quality of instruction ratings for each specialist as she delivered the aligned and nonaligned instruction. As the study progressed, district reading specialist coaching focused on three primary areas. Initially specialists tended to spend more time decoding words rather than equally dividing time among isolated word reading and reading connected text with an instructional emphasis of fluent decoding, vocabulary, and comprehension. To achieve this balance, reading specialists timed themselves to ensure an equal division of time. In addition, to increase intensity and behavior management scores, coaching focused on establishing a very brisk pace during instruction.

Table 7

Fidelity of Implementation, Aligned

	Mean quality by instructional attribute				
Reading specialist	Instructional time	Content	Pacing	Behavior management	Mean score
1	1.9	2.0	2.0	2.0	2.0
2	1.9	1.6	1.6	1.6	1.7
3	2.0	1.9	2.0	1.5	1.9
4	1.7	1.3	1.5	1.8	1.5
5	1.8	1.9	1.8	2.0	2.0
6	2.0	1.7	1.7	1.4	1.7
7	1.6	1.6	1.8	1.8	1.7
8	1.7	2.0	2.0	2.0	2.0
9	2.0	1.5	1.5	1.5	1.7
10	1.6	1.6	1.4	2.0	1.7
11	1.7	1.5	1.7	1.0	1.5
12	1.9	1.8	2.0	2.0	1.8
Mean	1.8	1.7	1.8	1.7	1.7

Table 8

Fidelity of Implementation, Nonaligned

	Mean quality by instructional attribute				
Reading specialist	Instructional time	Content	Pacing	Behavior management	Mean score
1	1.8	2.0	2.0	2.0	1.9
2	1.8	1.6	1.4	1.6	1.6
3	1.8	2.0	2.0	2.0	1.9
4	1.8	1.6	1.0	1.3	1.4
5	1.7	2.0	2.0	2.0	1.9
6	1.9	1.8	1.4	1.3	1.6
7	1.7	1.9	1.4	1.9	1.7
8	1.8	2.0	2.0	2.0	2.0
9	1.4	1.7	1.0	1.8	1.5
10	2.0	1.8	1.5	1.8	1.8
11	1.8	1.5	1.3	2.0	1.4
12	2.0	1.9	2.0	2.0	2.0
Mean	1.8	1.8	1.6	1.7	1.8

Overall, the fidelity of implementation for both treatments was very high (quality scores above 1.5 out of 2). The aligned treatment had a mean score of 1.8 with a standard deviation of .41 while the nonaligned treatment had a mean score of 1.74 with a standard deviation of .44. A comparison of the total percentage of high scores showed that the aligned fidelity rate was 88%, and the nonaligned was 90%. Unannounced observations conducted during fidelity checks indicated that reading specialists were delivering the appropriate aligned or nonaligned instruction. As can be seen in Tables 7 and 8, both treatments received a fidelity ranking of 1.8 for instructional time indicating that the appropriate instruction was being delivered and that reading specialists were delivering the two 15-minute instructional time blocks. The aligned treatment condition received a higher fidelity rating than the nonaligned treatment with scores of 1.8 and 1.7 respectively for content of instruction. Participating reading specialist difficulty in providing all components of the instructional program often resulted in lower fidelity check scores. This was most evident in the nonaligned treatment where specialist choice of activities impacted the timing of instruction, at times resulting in less reading of controlled decodable text with vocabulary and comprehension instruction, when compared with the delivery of instruction through a scripted program that gave specific guidance for both. Pacing of instruction was stronger in the nonaligned condition which received a score of 1.8 when compared with the 1.6 score in the aligned condition. In all cases, lower scores in pacing were due to difficulty with maintaining a brisk presentation with increased repetition of skills that were difficult for individual students. Low mean scores were reported for reading specialists 4 and 11 who both received 1.5 for the

aligned treatment and 1.4 for the nonaligned treatment. With continued coaching support, these two reading specialists received higher scores in all areas as the study progressed.

Measures

Rationale

The ability to read proficiently requires, at a minimum, accurate and fluent decoding to support the comprehension of text. These outcomes are central to the success of any second-grade intervention program. Research has clearly identified the importance of a students' ability to quickly and accurately read sight words and decode unfamiliar words as the foundation for overall reading ability (Adams, 1985; Ehri, 2005; Foorman & Moats, 2004; Torgeson, 2002). Stahl (1994) pointed out that "the ability to decode words not previously seen…often measured by pseudo word decoding tasks, is the hallmark of students who read well" (p. 232). To examine the effectiveness of supplemental reading instruction on students' phonics and fluency skills, measures included assessments of pseudo word decoding, word decoding, and decoding connected text.

Comprehension is acknowledged as the essence of reading (Durkin, 1993). In order to understand what is read, however, it is clear that vocabulary difficulty strongly influences the readability of text (Klare, 1984) and that direct teaching of vocabulary can improve comprehension of the text being read (Beck, Perfetti, & McKeown, 1982). Instruction is most effective when learners actively process new word meanings and when they experience multiple encounters with words (Stahl, 1998). To examine the effectiveness of supplemental reading instruction on students' vocabulary and

comprehension skills the Word Comprehension and Passage Comprehension subtests on the Woodcock Reading Mastery Tests-Revised-Normative Update (Woodcock, 1998) were administered. To examine the effects of aligned supplemental and nonaligned supplemental instruction on students' generalized reading ability, the composite scores for Reading Comprehension and Total Reading were also analyzed for variance between groups.

Instrumentation

A combination of measures was used to evaluate student growth in phonemic awareness, phonics, fluency, vocabulary, and comprehension. The DIBELS (Good & Kaminski, 2002) oral reading fluency subtest and the WRMT-R subtests of word identification, word attack, word comprehension, and passage comprehension were used to measure student reading achievement. To identify at-risk students for participation in the study, the fall DIBELS Oral Reading Fluency assessment was used as a screening measure. District literacy coaches individually administered all subtests in November and May to all participating second-grade students. Table 2 provides an overview of the assessment measures that were used in this study.

Dynamic Indicators of Basic Early Literacy Skills

The DIBELS (Good & Kaminski, 2002) assessment is comprised of a set of standardized, individually administered subtests targeting early literacy skills. The second-grade DIBELS assessment consists of a 1-minute nonsense word fluency (NWF) assessment that requires students to recode words, orally blending two and three

phonemes into nonsense words, and a one-minute oral reading fluency (ORF) assessment. In this study, the NWF subtest was administered as a pretest in the fall, and was used for progress monitoring. The NWF measure is an individually administered test of a student's knowledge of letter-sound correspondence and the ability to orally blend sounds into words. Students are presented with randomly ordered vowel-consonant and consonant-vowel-consonant nonsense words (e.g., pos, rav) on an 8.5" x 11" paper and asked to read out loud as many sounds or recoded words they can in one minute. The examiner records the student responses on a separate assessment booklet printed for each student. Students receive a score for each sound pronounced correctly and receive a second score for each recoded word pronounced correctly in one minute. Alternate form reliability estimates are .83. The predictive validity of DIBELS NWF to oral reading fluency in May of first grade is reported as .82. Although the NWF assessment is discontinued after the beginning of second grade for normally progressing students, at-risk students participating in this study were progress monitored weekly for phonemic awareness during the course of the study. This was due to delayed literacy development (weekly progress monitoring discontinued when students reached weekly progress monitoring levels of 50+ NWF correct responses with 15 words recoded correctly). Reliability estimates for the DIBELS assessment range from .92 to .96 (Good, 2002). Testing time is about 5 minutes or less per student.

The ORF assessment is a standardized, individually administered test of accuracy and fluency with connected text. Student performance is measured by having students read a passage aloud for 1 minute. Hesitations over 3 seconds and words mispronounced,

substituted, or omitted are counted as errors. Words self-corrected within 3 seconds are correct. The number of correct words per minute from the passage is the oral reading fluency rate. Fluency rates are evaluated on three 1-minute timed reading samples, and the median score is used as an index of student reading fluency. In the fall of second grade NWF should be benchmarked at 50 correct responses per minute or more. In the spring of second grade, the low-risk benchmark for ORF is 90 or more correct words per minute. Students reading 70 to 90 correct words per minute are at some risk. Students reading fewer than 70 words per minute are identified as being at risk. The test used at posttest.

Woodcock Reading Mastery Test-Revised

The WRMT-R (Woodcock, 1998), an individually administered, norm-referenced set of reading measures, was used as a pretest and posttest in this study. Four subtests, the word attack, word identification, word comprehension, and passage comprehension were used to assess students' basic reading skills. The WRMT-R provides two alternate, equivalent forms. Form G was used at pretest and Form H was used at posttest.

The word attack subtest of the WRMT-R evaluates the students' ability to pronounce pseudowords. It is commonly used (e.g., Torgesen, Wagner, & Rachotte, 1997) because it is widely regarded as a sensitive test of decoding skill and reading progress (e.g., Juel, 1996; Tunmer & Hoover, 1992). The word attack subtest contains 45 nonsense words, presented from easy to difficult. The test is discontinued after six consecutive errors. Students earn one point for each correct response, scores range from 0 to 45. Split-half and test-retest reliabilities are .94 and .97 for first grade; .91 and .95 for

third grade, respectively. There were no reliability or validity data found for the second-grade measures.

The word identification subtest of the WRMT-R is a frequently used measure of real-word reading ability (Torgesen et al., 1997). It requires the student to read words in lists with a five-second time limit per word. It consists of 106 words increasing in difficulty. Students begin reading with item one and discontinue after making six consecutive errors. The subtest was administered and scored in standard fashion. Students earn 1 point for each correct response. Scores range from 0 to 106. Split-half and test-retest reliabilities are .98 and .99 for first grade and .97 and .99 for third grade, respectively. There were no reliability or validity data found for second grade students.

The word comprehension subtest consists of three assessments, beginning with antonyms and synonyms, which ask student to supply a word with the opposite or same meaning, respectively. The antonyms subset consists of 33 questions that increase in difficulty while the synonyms subtest consists of 34 questions. Students begin with question 1 and discontinue after making six consecutive errors. The third word comprehension subtest is an analogies test with 79 questions. In this subtest the student reads a pair of words aloud, determines the relationship between them, reads a third word, and provides a fourth word with the same relationship to the third word as shown in the analogy between the first two words. Students earn one point for each correct answer and discontinue after making six consecutive errors. Split-half and test-retest reliabilities are .95 and .98 for first grade and .91 and .95 for third grade, respectively. There were no reliability or validity data provided for the second-grade measures.

The passage comprehension test is a cloze measure for which students silently read sentences and supply missing words. The passage comprehension subtest begins with simple pictures and text. Picture support is eliminated as more complex text is introduced, gradually increasing the amount of text read to four paragraphs. There are 68 questions and students earn one point for each correct answer and discontinue after six consecutive answers. Split-half and test-retest reliabilities are .94 and .97 for first grade; .92 and .96 for third grade, respectively. There were no reliability or validity data provided for second-grade measures.

Total testing time is about 30 minutes per student, depending upon the skill level of the student. Concurrent validity ranges for the subsets of the WRMT-R are reported from .63 to .82 when compared to the Total Reading Score of the Woodcock-Johnson Psycho-Educational Battery (Woodcock & Johnson, 1977). The reliability and validity are reported to be .99 in first grade and .98 in third grade for the total reading-full scale (WRMT-R, 1987). There were no reliability or validity data provided for second-grade measures.

District literacy coaches tested each participating student individually using both the DIBELS and WRMT-R assessments. The DIBELS assessment is used district-wide and district literacy coaches have provided district-wide training in test administration protocols and procedures. In order to ensure that the WRMT-R instrument was consistently administered, all district literacy coaches received initial training in test administration protocols and procedures before this study began. District literacy coaches were trained in a three-step process. First, a basic orientation to the assessment

procedures was provided. Administration of each subtest was modeled and practiced. Administrative guidelines in the manual were strictly adhered to, including pronunciations (i.e., pseudo words), ceilings and basals. Second, district literacy coaches were asked practice with nontreatment students and bring completed protocols to the next training session. At the third training session, protocols were reviewed for marking correct and incorrect responses as well as understanding of ceilings and basals. Each district literacy coach was also observed giving the WRMT-R assessment with all subtests used in this study. District literacy coaches with errors were asked to review the protocol or assessment subtests and were observed administering the test again to ensure accuracy of test administration.

In summary, the effects of aligning classroom and supplemental reading instruction were measured using the full-scale assessment of WRMT-R (Woodcock, 1998). Curriculum-based measurement (Good et al., 2001) was used as a screening assessment to identify at-risk students and as a progress-monitoring measure. See Table 9 for a matrix of outcome measures.

Raw scores, standard scores, and percentile ranks for the WRMT-R were calculated using the AGS software included with the WRMT-R. Raw scores are the number of correct responses on each measure. Standard scores at each point were based on a mean of 100 and a standard deviation of 15. Scores were standardized on the WRMT-R at each testing point. Therefore, a student with the same standard score at both pretest and posttest made average gains over time, equivalent with the normative sample on that measure, performing at expected levels. A standard score increase over time

Table 9

Matrix of Outcome Measures

Student achievement	Measure	Administered
Word reading		
Word identification	WRMT-R	Pretest-Posttest
Word attack	WRMT-R	Pretest-Posttest
Fluency		
Text reading	DIBELS ORF	Pretest-Posttest
Vocabulary		
Word comprehension	WRMT-R	Pretest-Posttest
Comprehension		
Passage comprehension	WRMT-R	Pretest-Posttest

indicates that the student has made more improvement than the average student in the normative sample. Percentile ranks show where a student ranks within a normative sample. A student who scores below the 30th percentile is receiving a score that is more than one standard deviation below the mean when compared to the normative sample.

CHAPTER IV

RESULTS

This study seeks to answer the following overarching question: What are the effects of aligning the content and sequence of small-group supplemental reading instruction with classroom core reading program instruction on struggling second-grade students' phonics, oral reading fluency, vocabulary, and comprehension? In this study, second-grade students scoring in the lowest quartile on the DIBELS assessment received 30 minutes of supplemental aligned or nonaligned instruction for 20 weeks. Five measures of reading were administered at the end of the supplemental instruction treatments. The specific research questions were as follows.

1. What is the effect of aligning supplemental and core reading instruction on struggling second-grade students' ability to use phonics effectively to identify words?
2. What is the effect of aligning supplemental and core reading instruction on struggling second-grade students' oral reading fluency?
3. What is the effect of aligning supplemental and core reading instruction on struggling second-grade students' vocabulary development?
4. What is the effect of aligning supplemental and core reading instruction on struggling second-grade students' comprehension of text?

Data Analysis

Preliminary analyses were conducted to test the analysis of covariance (ANCOVA) assumptions of normality, homogeneity of variances, and linearity. Pretest

means and standard deviations were compared across the aligned, supplemental and nonaligned, supplemental treatment groups. A nested (teachers nested within schools) ANCOVA analysis was conducted to examine differences in means between groups at posttest. In ANCOVA, pretest measures were used as covariates to adjust post-test scores for any pretest differences at the beginning of the study. The use of ANCOVA also increased power for finding treatment differences.

After controlling for pretest scores and accounting for the variance between reading specialists, posttest scores for each treatment condition were compared. Patterns of student response to supplemental instruction were examined for the dependent variables of oral reading fluency, word identification, word attack, word comprehension, and passage comprehension. The composite standardized scores received on reading comprehension and total reading were also examined for each treatment condition.

Test of Assumptions

The following three assumptions for ANCOVA were tested: (a) normality, (b) homogeneity of variances, and (c) linearity.

Normality

The normal distribution assumption of the DIBELS oral reading fluency assessment and the WRMT-R word identification, word attack, word comprehension, passage comprehension, reading comprehension, and total reading at pretest and posttest were tested with a visual analysis of histograms and the normal QQ plot. Although there was a slight negative skew for word attack and passage comprehension largely due to a

few outlying scores, the small sample size in this study for both treatment groups made the results understandable.

Homogeneity of Variances

Plots graphing predicted scores vs. residuals were tested with a visual examination of scatter plots. All residual plots showed no relationship between the data confirming that the assumption of homogeneity of variances was met for all dependent variables.

Linearity

Plots graphing observed vs. predicted scores were tested with a visual examination of scatter plots. Visual inspection and fit lines indicated that the assumption of linearity was met for all dependent variables. The normal Q-Q plot was used to test for homogeneity of slopes. A visual inspection of the data indicated that there were minor departures from normality due to a few extreme scores. Due to the effect of a few outlining scores within a relatively small sample size, it was determined that normality had not been breached.

Analysis of Pretest Data

The *t* test for independent samples showed no statistically significant differences between the aligned, supplemental and nonaligned, supplemental groups on oral reading fluency, word identification, word attack, word comprehension, or passage comprehension. There were also no statistically significant differences between the

aligned, supplemental and nonaligned, supplemental groups on the combined reading subtests of basic skills, reading comprehension, and total reading.

As shown in Table 3 in the previous chapter, the Pearson's chi-square test confirmed that there was not a significant demographic difference between the aligned, supplemental and nonaligned, supplemental groups in terms of gender, ethnicity, English language learners, or free and reduced-price meal qualification. As shown in Table 10, a two-tailed independent samples *t* test identified no statistically significant differences between the two groups when comparing all pretest measures. While a table of random numbers was used in an effort to establish equal groups, these data confirm the efficacy of the random assignment procedures.

Posttest Data—Descriptive Statistics

As expected, DIBELS ORF scores increased from pretest to posttest for students in both treatment conditions. As can be seen in Table 11, students in the aligned

Table 10

Group Comparison on Pretest Measures

	Aligned treatment (n = 65)		Nonaligned treatment (n = 68)			
Dependent variable	*M*	*SD*	*M*	*SD*	*t*	*p*
Oral reading fluency	13.43	6.78	13.38	7.10	.040	.968
Word identification (SS)	92.25	8.00	90.91	6.88	1.033	.304
Word attack (SS)	97.15	9.21	95.07	8.50	1.355	.178
Word comprehension (SS)	88.00	8.86	88.33	8.49	-.225	.822
Passage comprehension (SS)	87.46	7.76	87.32	8.27	.099	.921
Total reading (SS)	90.69	7.77	89.78	7.36	.696	.488

Table 11

Means, Standard Deviations, and Effect Sizes for Word Attack, Word Identification, Fluency, Word Comprehension, Passage Comprehension, Reading Comprehension, and Total Reading by Form of Supplemental Instruction

	Aligned treatment		Nonaligned treatment	
Measure	*M*	*SD*	*M*	*SD*
Oral reading fluency				
Pretest	13.43	6.78	13.38	7.10
Posttest	38.92	20.32	40.87	20.99
Average weekly growth	1.27		1.37	
Woodcock Reading Mastery-R subtests				
Word identification				
Pretest	92.25	8.00	90.91	6.88
Posttest	94.25	9.07	93.04	7.79
Word attack				
Pretest	97.15	9.20	95.07	8.50
Posttest	100.41	11.11	99.04	9.27
Word comprehension				
Pretest	88.00	8.86	88.34	8.49
Posttest	93.09	9.96	92.50	8.78
Passage comprehension				
Pretest	87.72	8.13	87.03	9.36
Posttest	90.51	7.50	90.16	7.21
Reading comprehension				
Pretest	87.46	7.76	87.32	8.27
Posttest	91.08	8.59	90.82	7.83
Total reading				
Pretest	90.69	7.77	89.78	7.36
Posttest	94.14	9.15	93.16	7.53

condition improved oral reading fluency by an average of 1.27 words per week while students in the nonaligned condition improved oral reading fluency by an average of 1.37 words per week. Hasbrouck and Tindal (2006) suggest that the average weekly

improvement for second grade students ranges from .6 words per week for students in the tenth percentile to 1.1 words per week for students in the ninetieth percentile. Using this standard of weekly improvement, the oral reading fluency for at-risk students in both treatments was above the national norm.

With the exception of word comprehension, students in the nonaligned treatment began with a standard mean score that was slightly lower than the aligned treatment group on the WRMT-R subtests (see Table 11). Both treatment groups consistently had small increases in standard scores on all WRMT-R subtests and composite scores, indicating progress within both treatments was slightly higher than that of grade-level peers from the normative sample. The mean for all subtests and composite standard scores of the WRMT-R were above 90 on the posttest (see tables for each subtest detailed above). It is interesting to note that the subtest word attack scores were higher for both the pretest and posttest, and the aligned treatment mean surpassed the normative sample group mean of 100 (see Table 11). This is most likely a reflection of the explicit synthetic phonics program that was the foundation of classroom instruction and both treatments.

Posttest Data—Inferential Statistics

Each of the subtest scores was analyzed two ways. First, a nested ANCOVA was performed to look for differences between the two treatment conditions. The ANCOVA analyses also looked for treatment by reading specialist interactions. Second, within the ANCOVA analyses, a partial eta squared effect size was calculated for each of the measures. An effect size of .2 is considered to be a small effect, .5 a moderate effect and

.8 a large effect (Cohen, 2001).

The DIBELS ORF subtest was used as the measure of reading fluency. The raw score obtained was a median score for reading second grade level passages for one minute. A pair-wise comparison comparing the mean scores on this measure showed no statistically significant differences, F (1, 108) = .002, $p > .05$. After controlling for pretest scores and accounting for the variance among reading specialists (which was not significant, F (1,108) = 1.577, p = .065), there were statistically significant differences found between the aligned condition and nonaligned condition for posttest scores on the DIBELS oral reading fluency assessment F (1,108) = 10.640, p = .000. As can be seen in Table 12, the results of the analyses indicate that providing aligned supplemental instruction had a statistically significant positive effect on students' oral reading fluency development and that there were no significant interactions for teacher effects. The partial eta squared effect size for oral reading fluency was .165.

The word identification subtest is a measure of a students' ability to read decodable and high frequency sight words. A pairwise comparison comparing the mean scores on this measure showed no statistically significant differences, F (1, 108) = 1.093,

Table 12

Analysis of Covariance and Effect Size Results for Group Comparison on DIBELS Oral Reading Fluency Subtest

Group	*M*	Std. error	*f*	*p*	*ES*
Aligned treatment (n = 77)	40.289	1.973			
Nonaligned treatment (n = 76)	40.162	1.990			
Treatment effect			10.640	.000	.165
Teacher effect			1.577	.065	

$p > .05$. After controlling for pretest scores and accounting for the variance among reading specialists there were statistically significant differences found between the aligned supplemental condition and nonaligned supplemental condition for posttest scores on the Word Identification subtest, F (1, 108) = 4.729, p =.011. As can be seen in Table 13, this analysis also showed statistically significant teacher differences between the two groups, indicating that the statistically significant effect identified in favor of the aligned treatment was impacted by both the alignment of instruction and an interaction with the reading specialists delivering the instruction F (1, 133) = 1.690, p = .041. The results of the analyses indicate that providing aligned supplemental instruction had a statistically significant positive effect on students' ability to decode phonetically regular words and to read sight words, however, there was an interaction between this score and teacher effects. The partial eta squared effect size for word identification was .081.

The word attack subtest measures a students' ability to use phonics effectively to identify words as they read pseudo words that increase in difficulty. A pairwise comparison

Table 13

Analysis of Covariance and Effect Size Results for Group Comparison on Word Identification (Standard Scores)

Group	*M*	Std. error	*f*	*p*	*ES*
Aligned treatment (*n* = 77)	94 .643	.645			
Nonaligned treatment (*n* = 76)	93.690	.644			
Treatment effect			4.729	.011	.081
Teacher effect			1.690	.041	

comparing the mean scores on this measure showed no statistically significant differences, F (1, 108) = .008, $p > .05$. After controlling for pretest scores and accounting for the variance among reading specialists [which was not significant, F (1, 108) = 1.584, $p = .063$], there were statistically significant differences found between the aligned supplemental condition and nonaligned supplemental condition for posttest scores on the word attack subtest, F (1, 108) = 8.141, $p = .001$). The results of the analyses indicate that the effects of providing aligned supplemental instruction had a statistically significant positive effect on students' word attack skills (see Table 14) and that there were no significant interactions for teacher effects. The partial eta squared effect size for Word Attack was .131.

The word comprehension subtest is a measure of a students' vocabulary, requiring students to use an understanding of word meanings to provide synonyms, antonyms and complete analogies. A pairwise comparison of mean scores on this measure showed statistically significant differences between the treatment conditions, F (1, 108) = 15.489, $p < .05$. After controlling for pretest scores and accounting for the variance among

Table 14

Analysis of Covariance and Effect Size Results for Group Comparison on Word Attack (Standard Scores)

Group	*M*	Std. error	*f*	*p*	*ES*
Aligned treatment (n = 77)	100.602	.925			
Nonaligned treatment (n = 76)	100.487	.929			
Treatment effect			8.141	.001	.131
Teacher effect			1.584	.063	

reading specialists, statistically significant differences were also found between the aligned supplemental condition and nonaligned supplemental condition for posttest scores on the word comprehension subtest, F (1, 108) = 15.489, p = .000. As can be seen in Table 15, this analysis also showed statistically significant teacher differences between the two groups indicating that the statistically significant effect identified in favor of the aligned treatment was impacted by both the alignment of instruction and an interaction with the reading specialists delivering the instruction, F (1, 133) = 2.003, p = .009. Therefore, the results of the analyses indicate that providing aligned supplemental instruction had a statistically significant positive effect on students' vocabulary development, however, there was an interaction between this score and teacher effects. The partial eta squared effect size for word comprehension was .223.

The WRMT-R passage comprehension subtest is a CLOZE assessment of reading comprehension. A pairwise comparison comparing the mean scores on this measure showed no statistically significant differences, F (1, 108) = .043, $p > .05$. After controlling for pretest scores and accounting for the variance among reading specialists

Table 15

Analysis of Covariance and Effect Size Results for Group Comparison on Word Comprehension (Standard Scores)

Group	*M*	Std. error	*f*	*p*	*ES*
Aligned treatment (*n* = 77)	94.084	.794			
Nonaligned treatment (*n* = 76)	92.896	.801			
Treatment effect			15.489	.000	.223
Teacher effect			2.033	.009	

(which was not significant, $F(1,108) = 1.370$, $p > .05$), there were statistically significant differences found between the aligned supplemental instruction group and nonaligned, supplemental instruction group for posttest scores on the passage comprehension subtest, F (1, 133) = 32.670, p = .000. The results of the analyses indicate that the effects of providing aligned supplemental instruction had a positive effect on students' reading comprehension development and that there were no significant interactions for teacher effects (see Table 16). The partial eta squared effect size was .370.

The reading comprehension score is a composite score derived from the vocabulary and comprehension subtest scores. A pairwise comparison comparing the mean scores on Reading Comprehension showed no statistically significant differences, F (1, 108) = .193, $p > .05$. After controlling for pretest scores there was no significant variance for teachers, F (1, 108) = 1.478, p = .097. After controlling for pretest scores and accounting for the variance among reading specialists, there were statistically significant differences between the aligned supplemental condition and nonaligned condition for posttest scores on reading comprehension, F (1,108) = 11.569, p = .000. The results of this analysis indicate that the effects of providing aligned supplemental

Table 16

Analysis of Covariance and Effect Size Results for Group Comparison on Passage Comprehension (Standard Scores)

Group	*M*	Std. error	*f*	*p*	*ES*
Aligned treatment (*n* = 77)	90.921	.676			
Nonaligned treatment (*n* = 76)	90.722	.679			
Treatment effect			32.670	.000	.370
Teacher effect			1.370	.146	

instruction had a positive effect on students' composite reading comprehension, and that there were no significant interactions for teacher effects (see Table 17). The partial eta squared effect size for reading comprehension was .176.

Total reading is a composite measure derived from the decoding pseudo words, reading sight words, vocabulary acquisition, and comprehension subtest scores. A pairwise comparison comparing the mean scores on the total reading measure showed no statistically significant differences, F (1, 108) = .704, $p > .05$. After controlling for pretest scores there was no significant variance for teachers, F (1, 108) = 1.411, p = .126. After controlling for pretest scores and accounting for the variance among reading specialists, there were statistically significant differences between the aligned supplemental condition and nonaligned condition for posttest scores, F (1, 108) = 5.183, p = .007. The results of these analyses indicate that the effects of providing aligned supplemental reading instruction had a positive effect on students' overall reading achievement. There were no significant interactions for teacher effects (see Table 18). The partial eta squared effect size for total reading was .088.

In summary, students in both treatment conditions made progress from pretest to

Table 17

Analysis of Covariance Results Group Comparison on Reading Comprehension (Standard Scores)

Group	*M*	Std. error	*f*	*p*	*ES*
Aligned treatment (n = 77)	91.674	.612			
Nonaligned treatment (n = 76)	91.292	.617			
Treatment effect			11.569	.000	.176
Teacher effect			1.478	.097	

Table 18

Analysis of Covariance and Effect Size Results for Group Comparison on Total Reading (Standard Scores)

Group	*M*	Std. error	*f*	*p*	*ES*
Aligned treatment (*n* = 77)	94.521	.599			
Nonaligned treatment (*n* = 76)	93.809	.600			
Treatment effect			5.183	.007	.088
Teacher effect			1.411	.126	

posttest. Students in the aligned supplemental intervention condition had significantly higher posttest scores on all subtest measures. Effect sizes on all treatment measures ranged from low to moderate. Finally, there were significant treatment condition by reading specialist interactions on the Word Identification and Word Comprehension subtests.

CHAPTER V

DISCUSSION

In this chapter, the four research questions from this study of providing aligned and nonaligned supplemental reading instruction are restated and discussed in relation to the research literature. Next, findings are contextualized within RTI research, examining the results of student RTI in the present study. Finally, the chapter provides a discussion of the theoretical and practical significance of this study and its limitations.

Research Questions

The purpose of this study was to investigate the effects of aligning supplemental reading instruction with classroom core reading instruction on struggling second-grade students' proficiency in phonics, fluency, vocabulary, and comprehension. Specifically, the study was designed to answer the following four research questions.

1. What is the effect of aligning supplemental and core reading instruction on struggling second-grade students' ability to use phonics effectively to identify words?
2. What is the effect of aligning supplemental and core reading instruction on struggling second-grade students' oral reading fluency?
3. What is the effect of aligning supplemental and core reading instruction on struggling second-grade students' vocabulary development?
4. What is the effect of aligning supplemental and core reading instruction on struggling second-grade students' comprehension of text?

Before the findings of the present study are reviewed and discussed in relation to

the research literature, it should be pointed out that all but one of the previous studies reviewed in Chapter II in addition to implicit core classroom instruction, increasing both instructional time and intensity. When explicit supplemental instruction is added to implicit core classroom instruction, previous studies provide evidence that at-risk student learning is improved.

The present study examined the effectiveness of supplementing explicit classroom core reading instruction with two forms of explicit supplemental instruction. In one supplemental reading condition reading skill instruction was aligned with the scope and sequence of classroom core reading instruction. In the second supplemental intervention condition reading skills instruction was not aligned with classroom core reading instruction. The findings of this study were consistent with those of previous studies of the effects of providing supplemental instruction. Previous findings suggest that (a) increasing instructional time increases student learning outcomes, (b) increasing instructional intensity through reducing group size to four or fewer students increases student learning outcomes, and (c) providing explicit instruction in phonemic awareness and phonics is effective for improving the decoding skills of at-risk students. In addition to providing additional evidence to support the effectiveness of providing supplemental instruction for at-risk students to increase learning outcomes, the present study extended previous research findings. This study suggests that providing supplemental reading instruction that is aligned with the scope and sequence of classroom core reading instruction is more effective than providing nonaligned supplemental instruction for improving the reading skills of at-risk students.

Effects of Aligned Supplemental Reading Instruction on

Students' Decoding Skills

In the present study, supplemental decoding instruction that was aligned with classroom decoding instruction in terms of philosophy, goals, instructional methods and materials, and with the same scope and sequence of instruction produced significant differences in favor of the aligned instructional condition over the nonaligned condition. The findings of this study provide further evidence to support the findings of Torgesen and colleagues (1999), which suggested that explicit supplemental phonemic awareness and phonics instruction lead to increased word recognition outcomes for at-risk students. In a similar study, Fuchs and colleagues (2001) compared the effects of providing explicit decoding instruction combined with supplemental phonemic awareness training for at-risk students to the effects of providing explicit decoding instruction alone. Fuchs and colleagues found that students performed significantly better when explicit supplemental instruction in both phonemic awareness and decoding was provided in addition to implicit core classroom instruction. The present study differs in that the classroom core decoding instruction was explicit, along with the explicit decoding instruction provided to students in both the aligned and nonaligned treatments. A comparison group that received no supplemental reading instruction was not provided in this study because the benefits of supplemental reading instruction are already well established in the research literature. However, the mean scores in both treatment conditions in this study increased from pretest to posttest on decoding ability, supporting the effectiveness of providing supplemental decoding instruction to at-risk students.

In addition to confirming the assertion that providing explicit supplemental instruction in phonemic awareness and phonics increases the performance of at-risk students, this study adds two additional dimensions to the research. First, participating students received explicit supplemental instruction in addition to explicit core classroom instruction. Second, when explicit supplemental instruction was aligned to explicit classroom core instruction, students made significantly greater gains than when content of supplemental instruction was not aligned to classroom instruction. In summary, results from this study provide evidence to support the effectiveness of increasing at-risk student learning outcomes by (a) providing explicit supplemental instruction in addition to explicit classroom core reading instruction, (b) aligning the content of explicit supplemental reading instruction with classroom core reading instruction, and (c) providing phonemic awareness and explicit phonics instruction for at-risk readers.

Effects of Aligned Supplemental Reading Instruction on Students' Oral Reading Fluency

The findings of this study provide further evidence to support the findings of two previous studies that examined the effects of oral reading practice to improve students' oral reading fluency. Fuchs and colleagues (2001) provided evidence that students who receive supplemental oral reading fluency practice through Peer Assisted Learning Systems performed better than students who did not receive peer-assisted supplemental practice. In a study of second grade students, Stahl and colleagues (1997) found evidence that supplemental fluency practice in the form of repeated readings resulted in greater

automaticity for students reading connected text. In the present study, mean fluency scores for students in both the aligned and nonaligned treatment conditions increased from pretest to posttest, supporting prior research findings.

In addition to confirming the assertion that providing supplemental guided oral reading fluency practice increases the performance of at-risk students, this study adds an additional dimension to the research. In addition to examining the effects of increasing classroom core instructional time spent on guided oral reading fluency, this study compared the effects of providing supplemental fluency practice with decodable text that is aligned with the scope and sequence of reading instruction in the classroom core reading program scope and sequence to supplemental fluency instruction that was not aligned. Data from this study suggest that at-risk students who received supplemental fluency instruction that was aligned to the scope and sequence of explicit classroom core fluency instruction made significantly greater gains in oral reading fluency than at-risk students whose supplemental fluency instruction was not aligned with classroom fluency instruction. Therefore, results from this study provide evidence to support the effectiveness of (a) providing aligned oral reading fluency practice for at-risk second grade students and (b) using controlled text to practice the same sequence of sounds and spellings that are taught in the classroom core-reading program.

Effects of Aligned Supplemental Reading Instruction on Students' Vocabulary Development

The findings of this study provide further evidence to support the findings of

previous research on vocabulary instruction. Vocabulary scores for students in both the aligned and nonaligned supplemental treatment conditions increased in response to instruction. Within the both treatment conditions at-risk students were exposed to new vocabulary through both direct teaching and additional exposure to content as text was read. Student vocabulary learning within both treatments was positive as evidenced by overall increased vocabulary scores. Therefore, this study further confirms the research of Beck et al., (2002), Brett et al. (1996), Graves and Ryder (1994), Robbins and Ehri (1994), Stahl (1998), and Stanovich (1986), which provided evidence that the direct teaching of individual words along with wide reading leads to increased vocabulary development.

This study also examined the effects of aligning supplemental vocabulary instruction for at-risk students with classroom core vocabulary instruction. The difference between the aligned and nonaligned supplemental vocabulary instruction was that the vocabulary instruction in the aligned treatment condition mirrored the classroom core reading program vocabulary instruction. This alignment provided additional practice and new vocabulary related to the themes being presented in the core reading program. Vocabulary instruction in the nonaligned treatment condition was intended to deepen student understanding of text selections that would be read during the supplemental instruction. While these selections were of high interest, the topics and themes were different than what was being taught in the classroom core reading program.

The significant difference in student vocabulary development favoring the aligned instruction treatment condition provides evidence that students acquire vocabulary more

quickly when new vocabulary words in supplemental instruction lessons are related to the content of the classroom core instruction. This effect may be due to two primary factors: encountering words in different contexts and repeated exposure to words. In the publication *Put Reading First,* the National Institute for Literacy (2001) presented the following recommendations for effective vocabulary instruction:

> **Provision of extended instruction that promotes active engagement with vocabulary improves word learning.**
> Students learn words best when they are provided with instruction over an extended period of time and when that instruction has them work actively with the words. The more students use new words and *the more they use them in different contexts,* the more likely they are to learn the words.
>
> **Repeated exposure to vocabulary in many contexts aids word learning.**
> Students learn new words better when they *encounter them often and in various contexts*. The more students see, hear, and work with specific words, the better they seem to learn them. When teachers provide extended instruction that promotes active engagement, they give students *repeated exposure to new words. When the students read those same words in their texts, they increase their exposure to the new words* (p. 36, emphasis added).

While students in both supplemental treatment conditions in this study were exposed to a rich variety of words while reading connected text, the aligned treatment condition provided repeated exposure to words presented in the classroom core reading instruction. By providing shorter pieces of text that aligned with the theme and content of classroom core instruction, the aligned supplemental instruction treatment provided extended exposure to new words as students encountered them in a variety of contexts. This repeated exposure may partially explain the significant difference in vocabulary learning favoring students in the aligned treatment condition.

Effects of Aligning Supplemental Reading Instruction on Students' Comprehension

The findings of this study provide further evidence to support current research findings examining the effects of explicit instruction in promoting the development of reading comprehension. Duffy and colleagues (1987) provided evidence that students receiving explicit instruction in comprehension strategies performed better than students who do not receive this instruction. Farstrup and Samuels (2002) provided evidence that explicit instruction in the features of text and text structure increases reading comprehension scores. In a meta-analysis of studies, the National Reading Panel (NICHD, 2000) found that explicit instruction in reading strategies that included demonstration, modeling supported by teacher interaction with students resulted in higher comprehension of text.

The present study confirmed the assertion that providing explicit instruction in comprehension increases the performance of at-risk students. Participating students in both the aligned and nonaligned supplemental treatment conditions received explicit supplemental comprehension strategy and text feature instruction in addition to explicit core instruction. Within both treatments, teachers provided "think alouds" as they used strategies to understand text. This instruction was followed by the use of graphic organizers to develop an understanding of text structure after reading the selections. It is possible that the increase in mean scores for both treatments were the result of providing additional instructional time focused on comprehension strategies and skills directly applied by at-risk students in the small-group instructional setting.

In addition to confirming the assertion that providing explicit comprehension instruction increases the performance of at-risk readers, this study also adds an additional dimension to comprehension research. When explicit supplemental comprehension instruction was aligned to classroom core comprehension strategy and text structure instruction, students made significantly greater gains than when the content of supplemental instruction was not aligned. Effect sizes for gains in vocabulary and comprehension in this study were moderate. Therefore, results from this study not only provide evidence to support the effectiveness of providing explicit comprehension strategy and text structure instruction for at-risk students, but also provides evidence for increased learning when the content of explicit supplemental instruction in comprehension is aligned with classroom core reading comprehension instruction.

Within the ANCOVA analyses of this study, a partial eta squared effect size using standardized scores was calculated for each of the measures. It is interesting to note that the two strongest effect sizes were obtained in the word comprehension (.223) and passage comprehension subtests (.370). The results of this study indicate that aligning supplemental vocabulary and comprehension instruction with classroom core reading program content had a significant beneficial effect upon the comprehension of at-risk students.

Effects of Aligned Supplemental Reading Instruction on At-Risk Students' Response to Intervention

Providing the highest quality instruction for at-risk students is a key theme in

education research today. While this has been true for many years, the No Child Left Behind Act (2001) has increased the urgency of identifying effective instructional practices. For much research, a comparison of one instruction method against another is used to identify the most effective instructional practices. In the present study, statistically significant differences were identified in favor of the aligned supplemental treatment condition in phonics, fluency, vocabulary, and comprehension. Therefore, this study suggests that providing aligned supplemental reading instruction is more effective than nonaligned supplemental instruction for at-risk students. This form of analysis, however, may leave critical questions unanswered.

Torgesen (2004) argued that a strong science of reading intervention also needs research that focuses on the conditions that must be in place to actually bring the reading skills of at-risk students into the typical range. Rather than seeking to determine if one method produces more rapid reading growth than another, Torgesen argued that researchers should pursue questions about the ultimate effectiveness of instructional methods in preventing or remediating reading difficulties. In essence, intervention research questions should change from "Which methods are most effective?" to "Which methods are most effective for moving students into the normal range of performance?"

Torgesen (2004) suggested that one way to determine when at-risk students have moved into the normal range of reading performance is to note when at risk students' reading achievement scores climb above the 30th percentile on standardized reading tests. For example, Al Otaiba and Fuchs (2002) identified the 30th percentile on a standardized measure as a benchmark of success. Performance below the 30th percentile is an indicator

of poor readers who will likely need additional/ongoing intervention services. Mathes and colleagues (2005) reported rates of student response to Tier I and Tier II intervention using a cut point of performance below the 30th percentile on the Woodcock Johnson III Basic Reading Skills cluster to denote inadequate response (Woodcock, McGrew, & Mather, 2001).

In the present study, the percentage of at-risk students scoring above the 30th percentile at posttest ranged from 41% on passage comprehension to 81% on the word attack. Using the 30th percentile on the WRMT-R III total reading composite score as a benchmark of success, 60% of students in the aligned treatment condition scored above the 30th percentile and 56% of students in the nonaligned treatment condition were above the 30th percentile at posttest. The same pattern of at-risk students who received aligned supplemental reading instruction moving into normal performance ranges held steady even when the standard was raised to the 40th and 50th percentiles.

In summary, the findings of the present study, when taken together with the findings of previous studies, form a consistent pattern of results that suggest supplemental instruction, increased learning time, and smaller group size increases the reading achievement of at-risk students. This study also provides new information regarding effective organization of supplemental reading instruction. The results of this study suggest that providing at-risk students with supplemental reading instruction that is aligned with classroom core reading instruction is effective for at-risk students. Stated another way, these findings suggest that at-risk students benefit from increased "FIT" of instruction: (a) with content mirroring the scope and sequence of the core classroom

instruction that is highly "*focused"* on individual need, (b) in small groups of less than four to increase "*intensity*" and (c) that provides a double dose of instruction, increasing instructional "*time.*"

The findings of the present study about supplemental reading instruction support and extend the converging evidence accumulated in previous studies. As Allington (1986) suggested years ago, at-risk students may benefit from supplemental instruction that is congruent with classroom instruction. This is because aligning classroom and supplemental reading instruction prevents the presentation of a fragmented instruction consisting of two different curricula with less instructional time for students to master either. Aligned instruction also keeps the responsibility for the learning of the at-risk student with the classroom teacher who is supported through a collaborative, coordinated effort with the supplemental instruction teacher. Aligned instruction also creates bridges for at-risk students connecting the classroom core program and the supplemental program. Finally, aligned reading instruction allows students to thoroughly learn and practice a consistent set of reading strategies and content.

Significance of the Study

The findings of this study and research supporting at-risk students in general may have both theoretical and practical implications. Both will be discussed here.

Theoretical Significance

In order to discuss the theoretical significance of the present study, it may be helpful to do so in the context of Chapter II, which discussed research giving guidance as

to the content of effective reading instruction in general, and the significance of this research when applied to at-risk students. The National Reading Panel (NICHD, 2000) synthesized evidence supporting effective instructional practices around the essential elements of phonemic awareness, phonics, fluency, vocabulary, and comprehension. The National Reading Panel also concluded that systematic instruction made a more significant contribution to students' reading development and that explicit instruction is significantly more effective for remediating difficulties in disabled readers.

In this study, essential elements of reading instruction were delivered to at-risk students within classroom core reading programs. In addition, supplemental instruction in the essential elements was also provided to at-risk students in the aligned and nonaligned treatment conditions. This increased instructional intensity and time for at-risk students and the result was that all participating students' reading scores improved over the course of the study (Torgesen et al., 1999; Vaughn, 2003a).

Significant differences were identified for at-risk students receiving instruction that was aligned with classroom reading instruction, increasing instructional fit. Effect sizes obtained attributed between 8% and 37% of the variance in scores to the alignment of classroom core and supplemental instruction. Therefore, the present study suggests an extension to the recommendation of increasing instructional time and intensity for at-risk students, connecting regular education and special education research findings. From a theoretical perspective, this study suggests that knowledge derived from the RTI research may be enhanced if intervention research and practice is designed so that intervention content is aligned with the same scope and sequence of skills, instructional materials and

methods, student activities, and reading strategies that are found in classroom core reading instruction. For example, when supporting at-risk readers through the alignment of supplemental instruction to the classroom core, classroom teachers, reading specialists, special education teachers and others supporting at-risk students coordinate instruction so that ample practice opportunities are provided to bring students to mastery.

Practical Significance

There is high interest in finding effective instructional methods to support at-risk students. As was presented in Chapter I, students at the highest risk of failure have often been supported through special education or reading specialist services outside of the core classroom where they received a "different" curriculum, often with commercial programs that were used as a supplement to the classroom core reading program. Due to a historical lack of progress for students who receive compensatory education in pull-out settings, there has been a renewed interest in push-in supplemental services where supplemental instruction occurs within the core classroom for at-risk students. The issue practitioners may be struggling with may not be as simple as location of services, but may also include deeper questions of the best instructional design for at-risk students. Alignment of the scope and sequence of instruction increases intensity as students focus on mastering the same skills in the classroom core and supplemental instruction, rather than receiving a different curriculum while working with reading specialists, special education teachers or other support staff. This study suggests that there is a significant, positive effect on at-risk student learning when specialists align supplemental instruction with classroom core instruction, double dosing at-risk students.

From a practical perspective, there are benefits and challenges from the findings of this study. Rather than continually purchasing commercial supplemental instruction programs to support at-risk students, teacher training can focus on how to create better instructional FIT to meet the needs of at-risk students through increasing *Focus, Intensity and Time*. These findings suggest that the initial instructional change for at-risk students may be to leverage resources by having supplemental instructors coordinate instruction with the classroom core to provide a double dose of research-based instruction. In an aligned instruction model, the core classroom teacher retains primary responsibility for the at-risk student, providing research-based classroom core instruction that includes 20- to 30-minute periods of small-group instruction for all students, including those at risk of failure. Rather than the supplemental teacher taking the student out of the core classroom to "fix" them, the supplemental teacher then provides an additional small-group instructional lesson, working with students in a group of four or less to increase instructional focus, intensity and time.

When aligned instruction occurs, there may be additional benefits beyond increasing the fit of instruction for students. During the initial phases of this study, specialists began reflecting on their practice, developing a deeper understanding of how much repetition was required to bring students at risk of failure to mastery of specific concepts. One benefit to tightly adhering to a scope and sequence of skills for mastery was seen in the precision of instruction delivered by reading specialists as they refined their personal practice. Using mastery guidelines to define when instruction could proceed into the next skill, reading specialist instruction became much more precise. In

both the aligned and nonaligned groups, the lowest students practiced each skill many times to attain mastery on progress monitoring assessments. Reading specialists reported that these changes not only facilitated literacy development of students participating in the study, it also helped them support other struggling readers in a more focused manner.

While working very well in many classrooms, the aligned treatment instruction required several paradigm shifts for classroom teachers. Rather than sending the low students out of the classroom where another teacher would take responsibility for students and "fix" them, classroom teachers were now providing initial instruction for all students and remained responsible for all students.

Limitations

The findings and significance of the present study should be limited to populations represented by the sample population used in the study. This study was conducted with at-risk second-grade students scoring in the lowest quartile on the DIBELS fall oral fluency assessment. Forty-six percent of students were white and 80% qualified for free or reduced-price meals. Care should be taken in generalizing the findings of this study beyond this population.

Second, because this study provided a comprehensive program for at-risk students, care should be taken to not confuse the findings of the present study with other studies that have provided instruction with a more narrow focus of skills (for example, studies of only phonemic awareness and decoding or comprehension as a single dependent variable). This study did not compare the benefits of providing aligned

instruction that is focused on word level skills versus a combined approach of word level and comprehension skills and therefore, the results should not be generalized to studies that have examined instructional effects on differing combinations of reading outcomes.

Third, the supplemental instruction in this study was delivered by highly-trained reading specialists. Care should be taken when generalizing the results of this study to other tutors and teachers delivering instructional services because in many cases, they are not certified teachers who hold reading endorsements. The selection of experienced, highly-trained reading specialists to deliver the treatments provided insight while at the same time bringing limitations to the generalization of results found in this study. Although Foorman and Torgesen (2001) recommend that the most highly trained teachers serve the most at-risk students, this is often not the case in schools today. As a result of choosing reading specialists who were highly trained, experienced teachers, the results of this study should not be generalized to at-risk student populations being served by paraprofessional instructors with less formal training and experience.

Finally, due to a variety of procedural concerns, care should be taken when comparing the findings of the present study with those of other RTI studies. The present study provided a specific curriculum map to identify supplemental materials that followed the core program scope and sequence (see Appendix B). While a few studies provide specific information regarding the instructional design applied to the content of supplemental instruction, most do not describe the skills taught in enough detail to evaluate alignment of instruction. Training support, especially for classroom teachers is also often briefly described. For example, published research reports often do not

describe the instructional activities provided during small-group, classroom core, and supplemental instructional groups; the training provided for core classroom teachers and specialists delivering instruction to at-risk students; and how individual students are labeled as "non-responders" with enough detail to draw comparisons between this study and others examining supplemental instruction for at-risk students.

Suggestions for Further Research

Consideration of the following methodological issues may be helpful to investigators. Because effect sizes in the present study were small for the aligned supplemental treatment condition, it may be helpful to expand the current study to include a larger number of participating at-risk students to determine the extent of instructional effectiveness. Although significant differences were found in the present study, the degree of actual impact on at-risk students remains unclear.

A second recommendation for further research would be to explore how these findings apply to at-risk students in other grades. Systematic instruction provides skill development through a preplanned scope and sequence of instruction, presenting less difficult skills before those with higher difficulty. Within word study, a tighter scope and sequence is often used to present phonemic awareness and phonics instruction in kindergarten and first grade. While this study cannot be generalized to younger students, further research could examine this relationship. How these results may apply to older struggling readers is also unclear. Although a few researchers have begun to examine this question (Senacore, 1987), studies have not explored the question with older students in a

scientifically-based manner that can be generalized to other populations. An examination of the effectiveness of aligning instruction between classroom core content literacy and small-group supplemental instructional services for at-risk students may provide insight into the most effective instructional content for older at-risk students.

Third, the debate as to the most effective instructional procedures for accelerating the development of at-risk students continues. The present study provided instruction in all five essential elements of reading identified by the National Reading Panel (NICHD 2000). At-risk students in this study received an aligned, comprehensive, supplemental instructional program. Intervention research has addressed questions of instruction intensity and content have focused predominantly on younger at-risk students. Further research is needed to determine the most effective intensity and content for at-risk students at various stages of reading development and grade-level placement.

Finally, more research is needed to examine the level of expertise needed for less highly trained instructors to successfully meet the needs of at-risk students. While there was a significant difference found in favor of the aligned supplemental instruction in this study, it took a higher level of professional knowledge for participating reading specialists to make instructional decisions as to the best instructional methods of delivery to meet student needs. Where schools often employ less highly trained personnel to provide supplemental instructional services, more research is needed to determine the relationship between the level of training of the teacher delivering supplemental instruction and the specificity of instructional materials needed to achieve the highest level of instructional effectiveness.

REFERENCES

Adams, B., & Brown, S. (2003). *The six-minute solution: Primary level.* Natick, MA: Cambium Learning.

Adams, G., & Englemann, S. (1996). *Research on direct instruction: 25 years beyond DISTAR.* Seattle, WA: Educational Achievement Systems.

Adams, M. (1985). The growth of children's sight vocabulary: A quick test with educational and theoretical implications. *Reading Research Quarterly, 20*(3), 262-281.

Adams, M. (1990). *Beginning to read: Thinking and learning about print.* Cambridge, MA: MIT Press.

Allington, R. (1986). Policy constraints and effective compensatory reading instruction: A review. In I. J. (Ed.), *Effective teaching of reading and research and practice* (pp. 261-289). Newark, DE: International Reading Association.

Allington, R. (1994). What's special about special programs for children who find learning to read difficult? *Journal of Reading Behavior, 1*(26), 95-115.

Allington, R., &. Johnston, P. (1986). The coordination amoung regular classroom reading programs and targeted support programs. In B. I. Williams, P. A. Richmond, & B. J. Mason (Eds.), *Designs for compensatory education: Conference proceedings and papers* (pp. 440-478). Chapel Hill, NC: Research Evaluation Associates.

Allington, R., & Walmsley, S. A. (1995). *No quick fix: Rethinking literacy programs in America's elementary schools.* New York: Teachers College Press.

Al Otaiba, S., & Fuchs, D. (2002). Characteristics of children who are unresponsive to early literacy intervention: A review of the literature. *Remedial and Special Education, 23*, 300-316.

Bean, R. C. (1991). In class or pull out: Effects of setting on the remedial reading program. *Journal of Reading Behavior, 4*(23), 445-464.

Bean, R. C. (2004). *The reading specialist.* New York: Guilford.

Beck. I., Perfetti, C., & McKeown, M. (1982). The effects of long-term vocabulary instruction on lexical access and reading comprehension. *Journal of Educational Psychology, 74*, 506-521.

Beck, I. L., McKeown, M. G., & Kucan, L. (2002). *Bringing words to life: Robust vocabulary instruction.* New York: Guilford.

Borman, G., &. D'Augostino, J. V. (1996). Title I and student achievement: A meta-analysis of federal evaluation results. *Educational Evaluation & Policy Analysis, 18*, 309-326.

Brett, A., Rothlein, L., & Hurley, M. (1996). Vocabulary acquisition from listening t stories and explanations of target words. *Elementary School Journal, 96*, 415-422.

Brown, J. S., Collins, A., & Duguid, P. (1989). Situated cognition and the culture of learning. *Educational Researcher, 18*, 32-42.

Carnine, D. W., Silbert, J., Kame'enui, E. J., & Tarver, S. G. (2004). *Direct instruction in reading.* Upper Saddle River, NJ: Merrill-Prentice Hall.

Center, Y., Freeman, L., & Robertson, G. (2001). The relative effect of a code-oriented and a meaning-oriented early literacy program on regular and low progress Austrailian students in year 1 classrooms which implement Reading Recovery. *International Journal of Disability, Development and Education, 48, 207-232.*

Clay, M. (1985). *The early detection of reading difficulties*. Portsmouth, NH: Hinemann.

Cohen, B. (2001). *Explaining psychological statistics.* New York: Wiley.

Connor, C., Morrison, F., & Underwood, P. (2007). A second chance in second grade: The independent and cumulative impact of first and second grade reading instruction and students' letter-word reading skill growth. *Scientific Studies of Reading, 11*(3), 199-233.

Deno, S. L., Fuchs, L. S., Marston, D., & Shinn, M. (2001). Using curriculum-based measurement to establish growth standards for students with learning disabilities. *School Psychology Review, 30*(4), 507-524.

Denton, C., Anthony, J., Parker, R., & Hasbrouck, J. (2004). Effects of two tutoring programs on the English reading development of Spanish-English bilingual students. *The Elementary School Journal , 104*(4), 289-305.

Downing, J. (1979). *Reading and reasoning.* New York: Springer-Verlag.

Duffy, G., Roehler, L. R., Sivan, E., Rackliffe, G., Book, C, Meloth, M. S., et al. (1987). Effects of explaining the reasoning associated with using reading strategies. *Reading Research Quarterly, 23*, 347-368.

Durkin, D. (1993). *Teaching them to read* (6th ed.) Boston: Allyn & Bacon.

Ehri, L. (2005). Learning to read words: Theory, findings and issues. *Scientific Studies of Reading , 9*(2), 167-188.

Elbaum, B. V. (2000). How effective are one-to-one tutoring programs in reading for elementary students at risk for reading failure? A meta-analysis of the intervention research. *Journal of Educational Psychology, 92*, 605-619.

Elbaum, B., Vaughn, S., Hughes, M., & Moody, S. (2000). How effective are one-to-one tutoring programs in reading for elementary students at risk for reading failure? A meta-analysis of the intervention research. *Journal of Educational Psychology, 92, 605-619.*

Farstrup, A., & Samuels, J. (2002). *What research has to say about reading instruction.* Newark, NJ: International Reading Association.

Fletcher, J. M., Francis, D. J., Shaywitz, S. E., Lyon, G. R, Foorman, B. R., Stuebing, K. K., et al. (1998). Intelligence testing and the discrepancy model for children with learning disabilities. *Learning Disabilities Research and Practice, 13*, 186-203.

Fletcher, J. M., Shaywitz, S. E., Shankweiler, D. P., Katz, L., Liberman, I. Y., Stubing, K. K., et al. (1994). Cognitive profiles of reading disability: Comparisons of discrepancy and low achievement definitions. *Journal of Educational Psychology, 86*, 6-23.

Foorman, B. R. (1996). Relation of phonological and ortographic processing to early reading: Comparing two approaches to regression-based, reading-level-match design. *Journal of Educational Psychology, 88*, 639-652.

Foorman, B. R. (1997). The case for early reading interventions. In B. A. Blachman (Ed.), *Foundations of reading acquisition and dyslexia: Implications for early intervention* (pp. 243-264). Hillsdale, NJ: Erlbaum.

Foorman, B. R., Francis, D.J ., Fletcher, J. M., Schatschneider, C., & Hehta, P. (1998). The role of instruction in learning to read: Preventing reading failure in at-risk children. *Journal of Educational Psychology, 90*, 37-55.

Foorman, B. R., & Moats, L. C. (2004). Conditions for sustaining research-based practices in early reading instruction. *Remedial and Special Education, 25*, 51-60.

Foorman, B. R., & Torgeson, J. (2001). Critical elements of classroom and small-group instruction promote reading success in all children. *Learning Disabilities Research & Practice, 16*(4), 203-212.

Fuchs, D., Fuchs, L., Thompson, A., Otaiba, S., Yen., L., Yang, N., et al. (2001). Is reading important in reading-readiness programs? A randomized field trial with teachers as program implementers. *Journal of Educational Psychology, 93 (2), 251-267.*

Fulmer, D., Harty, K., & O'Connor, R. (2005). Tiers of intervention in kindergarten through third grade. *Journal of Learning Disabilities, 38*(6), 532-538.

Gartner, A., & Lipsky, D. K. (1987). Beyond special education: Toward a quality system for all students. *Harvard Educational Review, 57*, 367-395.

Good, R. W. (2002). *System-wide percentile ranks for DIBELS benchmark assessment (Tech. Rep. 9).* Eugene: University of Oregon.

Good, R., & Kaminski, R. (2002). *DIBELS oral reading fluency passages for first through third grades* (Technical Report No. 10). Eugene: University of Oregon.

Good, R. H., Simmons, D. C., & Kame'enui, E. J. (2001). The importance and decision-making utility of a continuum of fluency-based indicators of foundational reading skills for third-grade high-stakes outcomes. *Scientific Studies of Reading, 5*, 257-288.

Graves, M., & Ryder, R. (1994). Vocabulary instruction presented prior to reading in two basal readers. *Elementary School Journal, 95 (2), 139-153.*

Haager, D., Klinger, J., & Vaughn, S. (2007). *Evidence-based reading practices for response to intervention*. Baltimore: Brookes.

Harris, K. R, & Pressley, M. (1991). The nature of cognitive strategy instruction: Interactive strategy instruction. *Exceptional Children, 57*, 392-404.

Hart, B., & Risley, T. (1995). *Meaningful differences in the everyday experience of young American children.* Baltimore: Brookes.

Hasbrouck, J., Ihnot, C., & Rogers, G. H. (1999). "Read naturally": A strategy to increase oral reading fluency. *Reading Research and Instruction, 39*, 27-38.

Hasbrouck, J., & Tindal, G. (2006). Oral reading fluency norms: A valuable assessment tool for reading teachers. *The Reading Teacher,* 59(7), 636-644.

Hatcher, P., Hulme, C., & Ellis, A. (1994). Ameliorating early reading failure by integrating the teaching of reading and phonological skills: The phonological linkage hypothesis. *Child Development, 65 (1), 41-57.*

Hoffman, J. (1991). Teacher and school effects in learning to read. In R. Barr, M. Kamil, P. Mosenthal, & P. Pearson (Eds.), *Handbook of reading research* (pp. 911-950). New York: Longman.

Ihnot, C. (1992). *Read naturally.* St. Paul, MN: Read Naturally.

International Reading Association. (2004). *Standards for reading professionals.* Newark, DE: Author.

Johnston, P., &. Allingon, R. (1991). Remediation. In R. Barr, M. Kamil, P. Mosenthal, & P. Pearson (Eds.), *Handbook of reading research* (pp. 984 - 1012). New York: Longman.

Johnston, P., Allington, R., & Afflerbach, P. (1985). The congruence of classroom and remedial reading instruction. *The Elementary School Journal, 85*(4), 465-478.

Juel, C. (1996). What makes literacy tutoring effective? *Reading Research Quarterly, 31*, 268-289.

Kenk, L., & Kibby, M. (2000). Re-mediating reading difficulties: Appraising the past, reconciling the present, constructing the future. In M. M. Kamil (Ed.), *Handbook of reading research* (Vol. 3, pp. 667-690). Mahwah, NJ: Erlbaum.

Klare, G. (1984). Readability. In R. M. P. D. Pearson (Ed.), *Handbook of reading research* (pp. 681-794). New York: Longman.

Liverman, I. Y., Shankwiler, D., & Liberman, A. M. (1989). The alphabetic principle and learning to read. In D. Shakweiler & I. Y. Liberman (Eds.), *Phonology and reading disability: Solving the reading puzzle* (pp. 1-33). Ann Arbor: University of Michigan Press.

Marston, D. (2001, August). *A functional and intervention-based assessment approach to establishing discrepancy for students with learning disabilities*. Paper presented at LD Summit, Washington, DC.

Mathes, P., Denton, C., Fletcher, J., Anthony, J., Francis, D., & Schatschneider, C. (2005). The effects of theoretically different instruction and student characteristics on the skills of struggling readers. *Reading Research Quarterly, 40*(2), 148-182.

McAloon, N. (1993). Our role in mainstreaming. *Journal of Reading, 4*(36), 328-329.

Morris, D., Tyner, B., & Perney, J. (2001). Early steps: Replicating the effects of an early first grade reading intervention program. *Journal of Educational Psychology, 92*(4), 681-693.

National Institute for Literacy. (2001). *Put reading first.* Washington, DC: Author.

National Institute of Child Health and Human Development (NICHD). (2000). *Report of the National Reading Panel. Teaching children to read: An evidence-based assessment of the scientific reearch literature on reading and its implications for reading instruction: Reports of the subgroups (NIH Publication No. 00-4754).* Washington, DC: US Government Printing Office.

No Child Left Behind Act of 2001. (2001). PL 107-110, 115 Stat.1425, 20 U.S.C. §§ 6301 et seq.

Open Court Reading. (2000). *Intervention guide, second grade*. Columbus, OH: SRA/McGraw-Hill.

Pogrow, S. (2002). Success for all is a failure. *Phi Delta Kappan , 83*(6), 463-468.

Powell, W. R. (1964). The joplin plan: An evaluation. *The Elementary School Journal, 64*(7), 387-392.

Rasinski, T. (1990). Effects of repeated reading ad listening-while reading on fluency. *Journal of Educational Research, 83*, 147-150.

Robbins, C., & Ehri, L. C. (1994). Reading storybooks to kindergarteners helps them learn new vocabulary words. *Journal of Educational Psychology, 86*, 54-64.

Roberts, T., & Meiring, A. (2006). Teaching phonics in the context of children's literature or spelling: Influences on first grade reading, spelling, and writing and fifth-grade comprehension. *Journal of Educational Psychology, 98 (4), 690-713.*

Samuels, S. J. (1979). The method of repeated readings. *The Reading Teacher, 32*, 403-408.

Senacore, J. (1987). Needed: A better link between the reading center and classroom. *View-points*, 62(2), 3-15.

Shanahan, T. (2008). *Literacy learning blog*. Retrieved January 26, 2008, from www.shanahanonliteracy.com

Share, D. (1984). Sources of individual differences in reading acquisition. *Journal of Educational Psychology, 76,* 1309-1324.

Shinn, M. R., & Good, R. H. (1992). Curriculum-based measurement of oral reading fluency: A confirmatory analysis of its relation to reading. *School Psychology Review, 21*, 459-479.

Simmons, D., Kame-enui, E., Harn, B., Coyne, M., Stoolmiller, M., Santoro, L., et al. (2007). Attributes of effective and efficient kindergarten reading intervention: An examination of instructional time and design specificity. *Journal of Learning Disabilities, 40*(4), 331-347.

Slavin, R. (1987). Making Chapter I make a difference. *Phi Delta Kappan, 2*(69), 110-119.

Slavin, R., Madden, N., Karweit, N. Livermon, B., & Dolan, L. (1990). Success for all: First-year outcomes of a comprehensive plan for reforming urban education. *American Educational Research Journal, 27*(2), 255-278.

Snow, C. E., Burns, M. S., & Griffin, P. (Eds.). (1998). *Preventing reading difficulties in young children.* Washington, DC: National Academy.

Sprick, M. M., Howard, L. M., & Fidanque, A. (1998). *Read well: Critical foundations in primary reading.* Longmont, CO: Sopris West.

Stahl, S. (1994). Defining phonological awareness and its relationship to early reading. *Journal of Educational Psychology, 86*(2), 221-234.

Stahl, S. (1998). Four questions about vocabulary. In I. C. (Ed.), *Learning from text across conceptual domains* (pp. 73-94). Mahwah, NJ: Erlbaum.

Stahl, S., Heubach, K., & Cramond, B. (1997). *Fluency-oriented reading instruction.* Athens: GA, and Washington, DC: National Reading Research Center and U.S. Department of Education, Office of Educational Research and Improvement, Educational Resources Information Center.

Stanovich, K. (1986). Matthew effects in reading: Some consequences of individual differences in the acquisition of literacy. *Reading Research Quarterly, 21(4), 360-407.*

Stanovich, K., &. Siegel, L.S. (1994). Phenotypic performance profile of children with reading disabilities: A regression-based test of the phonological-core variable-difference model. *Journal of Educational Psychology, 86*, 24-53.

Strahan, D., Carlone, H., & Horn, S. (2003). Beating the odds at Archer Elementary School: Developing a shared stance toward learning. *Journal of Curriculum and Supervision, 18(3), 204-222.*

Taylor, B., Pearson, P., Cark, K., & Walpole, S. (1999). *Beating the odds in teaching all children to read.* Washington, DC: U.S. Department of Education.

Tilly, W. D., Reschly, D. J., & Grimes, J. (1999). Disability determination in problem-solving system: Conceptual foundations and critical components. In D. T. Reschly (Ed.), *Special education in transition* (pp. 150-176). Longmont, CO: Sopris West.

Torgesen, J. (1997). The prevention and remediation of reading disabilities: Evaluating what we know from research. *Journal of Academic Language Therapy, 1*, 11-47.

Torgesen, J. (2000). Individual differences in response to early intervention in reading: The lingering problem of treatment resisters. *Learning Disabilities Research and Practice , 15*, 55-64.

Torgesen, J. (2002). The prevention of reading difficulties. *Journal of School Psycholog, 40*, 7-26.

Torgesen, J. (2004). Lessons learned from research on interventions for students who have difficulty learning to read. In P. C. McCardle (Ed.), *The voice of evidence* (pp. 355-382). Baltimore: Brookes.

Torgesen, J, Wagner, R., & Rachotte, C. (1997). Prevention and remediation of severe reading disabilities: Keeping the end in mind. *Scientific Studies of Reading, 1*, 217-234.

Torgesen, J., Wagner, R., Rashotte, C., Lindamood, P., Roe, E., Conway, T., et al. (1999). Preventing reading failure in young children with phonological processing disabilities: Group and individual responses to instruction. *Journal of Educational Psychology, 91*, 579-573.

Tunmer, W. E., & Hoover, W. A. (1992). Cognitive and linguistic factors in learning to read. In P. B. Gough, L. C. Ehri, & R. Trieman (Eds.) *Reading acquisition* (pp. 175-214). Hillsdale, NJ: Erlbaum.

Vaughn, S. (2003a). Group size and time alloted to intervention: Effects for students with reading disabilities. In B. R. Foorman (Ed.), *Preventing and remediating reading difficulties: Bringing science to scale* (pp. 299-324). Baltimore: York.

Vaughn, S. (2003b, December). *How many tiers are needed for response to intervention to achieve acceptable prevention outcomes*. Paper presented at the National Research Center on Learning Disabilities RTI Symposium, Kansas City, MO.

Vaughn, S., Linan-Thompson, S., Mathes, P. G., Cirino, P. T., Carlson, C., Francis, D. H., et al. (2006). First grade English language learners at-risk for reading problems: Effectiveness of an English intervention. *Elementary School Journal, 107*(2), 153-180.

Vellutino, F. R., Scanlon, D. M., Sipay, E. R., Small, S. G, Pratt, A., Chen, R., et al. (1996). Cognitive profies of difflicult-to-remediate and readily remediated poor readers: Early intervention as a vehicle for distinguishing between cognitive and experiential deficits as basic causes of specific reading disability. *Journal of Educational Psychology, 88*, 601-638.

Wanzek, J. A. (2005). *Response to varying amounts of time in reading intervention for students demonstrating insufficient response to intervention*. Unpublished doctoral dissertation, The University of Texas at Austin.

Wilson-Bridgman, J. (1998). Curricular congruence at a conceptual level: Does curriculuar congruence exist between to programs that constitute one district's early literacy project (the classroom language arts program and the Reading Recovery program? *Reading Improvement*, *40*(4), 153-163.

Woodcock, R. (1998). *The Woodcock Reading Mastery Tests-Revised: Normative update.* Circle Pines, MN: American Guidance Service.

Woodcock, R. W., & Johnson, M. B. (1977). *Woodcock-Johnson Psycho-Educational Battery.* Allen, TX: DLM Teaching Resources.

Woodcock, R., McGrew, K., & Mather, N. (2001). *Woodcock-Johnson III Tests of Achievement.* Itasca, IL: Riverside.

APPENDICES

Appendix A

Lettes of Information

Curriculum Services
2500 South State Street
Salt Lake City, UT 84115
801 646-4192
Fax: 801 646-4103

LETTER OF INFORMATION
The Effects of Aligning Core and Supplemental Reading Instruction
On Second Grade Students' Reading Achievement

Carla Wonder-McDowell, Assistant Director of Elementary Reading, Granite School District and Professor John A. Smith in the Department of Elementary Education at Utah State University are conducting a research study to find out more about how to best support second-grade students who are experiencing challenges when learning to read. The purpose of the study is to gather information on the effectiveness of aligning the sequence of instructional concepts in supplemental reading instruction programs with the sequence found in Granite School District's Open Court Reading program. All participating students will continue to receive instruction with the reading specialist and will receive comprehensive literacy instruction, the only difference will be in the order in which concepts are taught. Your child has been selected to take part because he/she is a second-grade student who is working with an endorsed reading specialist in a school that uses Open Court Reading. There will be approximately 12 participants at this site and approximately 150 total participants in this research study.

The Granite School District employs a reading specialist in each elementary school to work with students who are identified as needing additional instructional support through DIBELS screening assessments. As you are aware, your child has been receiving assistance from the reading specialist in addition to instruction from his/her classroom teacher. As a participant in this study, your child will continue to receive the same daily instructional support in a small group of students with the reading specialist for a minimum of 20 weeks. This will still be in addition to regular classroom instruction just as he/she is receiving now, there will be no change in services. District sponsored reading assessments will be administered to monitor progress and assess instructional effectiveness (DIBELS, Woodcock Reading Mastery).

There are no anticipated risks involved with participation in this study. During the course of this research study, you will be informed of any significant new findings (either good or bad), such as changes in the risks or benefits resulting from participation in the research if there are any unforeseen changes. There is no cost for participation in the study or for receiving reading specialist services for your child.

Our goal is to continue to increase the reading achievement of all second-grade students working with reading specialists. Although there is not a guarantee, the opportunity of receiving supplemental instruction with either instructional sequence by a highly-trained reading specialist may benefit your student through the acquisition of increased reading skills. The investigators may also learn more about how to best support struggling readers, providing a benefit to other second-grade students who are facing challenges in learning to read.

Research records will be kept confidential, consistent with federal and state regulations. Only the investigators will have access to the data which will be kept in a locked file cabinet in a locked room. Personal, identifiable information will be kept for four months after the study and will then be destroyed. The Institutional Review Board for the protection of human participants at Utah State University has approved this research study. If you have any questions or concerns about your rights, you may contact the IRB at (435) 797-1821.

If you have questions or research-related problems, you may also reach Carla Wonder-McDowell, Granite School District, Assistant Director of Elementary Literacy, at 646-4192.

John Smith, PhD.
John A. Smith, Ph.D., Principal Investigator
(435) 797-0388

Carla Wonder-McDowell, M.Ed.
Carla Wonder-McDowell, M.Ed., Assistant Director, Curriculum
(801) 646-4192

Date Created: Dec. 5, 2007
USU IRB Approved: 12.17.2007
Approval terminates: 12.6.2008; Protocol #1940
IRB Password Protected per IRB Administrator

Departamento de Programa de Estudios
2500 South State Street
Salt Lake City, UT 84115
801 646-4192
Fax: 801 646-4103

CARTA DE INFORMACIÓN

Los efectos de alinear el programa de estudios básico y la instrucción de lectura complementaria sobre el logro de lectura de los estudiantes de 2° Grado

Carla Wonder-McDowell, Subdirectora de Lectura de Escuela Primaria del Distrito Escolar de Granite y el Profesor John A. Smith del Departamento de Educación Primaria de la Universidad de Utah están dirigiendo un estudio de investigación para averiguar más sobre cómo apoyar mejor a los estudiantes de 2° Grado que tienen dificultades para aprender a leer. El propósito del estudio es reunir información sobre la efectividad de alinear la secuencia de los conceptos de instrucción en los programas de instrucción de lectura complementaria con la secuencia encontrada en el Programa "Open Court Reading" (Lectura Abierta) del Distrito Escolar de Granite. Todos los estudiantes que participan continuarán recibiendo instrucción con el especialista de lectura y recibirán instrucción de alfabetización total. La única diferencia será el orden en que se enseñan los conceptos. Su hijo/a ha sido seleccionado para ser parte del estudio porque él o ella es un estudiante de 2° Grado que está practicando la lectura con un/a especialista certificado en lectura en una escuela que usa el Programa "Open Court Reading". Habrá aproximadamente 12 participantes en este lugar y aproximadamente 150 participantes totales en este estudio de investigación.

El Distrito Escolar de Granite emplea a un especialista de lectura en cada escuela primaria para trabajar con los estudiantes que son identificados por medio de las evaluaciones DIBELS [Indicadores Dinámicos de Habilidades Básicas de Alfabetización Temprana] que necesitan más instrucción de apoyo. Como están en conocimiento, además de la instrucción del maestro/a de clase, su hijo/a ha estado recibiendo ayuda del especialista de lectura. Como participante en este estudio, su hijo/a continuará recibiendo el mismo apoyo de instrucción diaria, por un mínimo de 20 semanas, en un grupo pequeño de estudiantes con el especialista de lectura. Esto será en complemento con la instrucción de clase regular que él o ella recibe en este momento y no habrá cambio en los servicios. Las evaluaciones de lectura patrocinadas por el Distrito Escolar se administrarán para controlar el progreso y evaluar la efectividad de la instrucción (DIBELS, Woodcock Reading Mastery [Dominio de la Lectura]).

No se anticipan riesgos por participar en este estudio. Durante el curso de este estudio de investigación, usted será informado sobre todo descubrimiento/s importante (sea bueno o malo), tal como cambios en los riesgos o los beneficios que resultan de la participación en la investigación si hay cambios no previstos. La participación en el estudio o los servicios del especialista de lectura para su hijo/a no tienen costo alguno para usted.

Nuestra meta es continuar aumentando el logro o aprovechamiento de la lectura de todos los estudiantes de 2° Grado que practican la lectura con los especialistas. Aunque no hay garantía, la oportunidad de recibir instrucción complementaria con instrucción en secuencia por un especialista de lectura muy capacitado puede beneficiar el aumento de la adquisición de las habilidades de lectura de su hijo/a. Además, los investigadores pueden aprender más sobre cómo apoyar mejor a los lectores que tienen dificultades y esto es un beneficio a otros estudiantes de 2° Grado que están enfrentando desafíos para aprender a leer.

Los registros de investigación se mantendrán en forma confidencial de acuerdo con las regulaciones del Estado y el Gobierno Federal. Solamente los investigadores tendrán acceso a los datos, los cuales se guardarán en un archivo y cuarto cerrados. La información de identificación personal se guardará por cuatro meses después del estudio; y luego, se destruirá. El Institutional Review Board (IRB) (Consejo de Revisión Institucional) de la Utah State University para la protección de los participantes humanos ha aprobado este estudio de investigación. Si usted tiene preguntas o preocupaciones sobre sus derechos, puede comunicarse con IRB al teléfono (435) 797-1821.

Si tiene preguntas o problemas relacionados con la investigación, usted puede comunicarse además con Carla Wonder-McDowell, Subdirectora de Lectura de la Escuela Primaria del Distrito Escolar de Granite al teléfono 646-4192.

John Smith, PhD.
John A. Smith, Ph.D., Principal Investigator
(435) 797-0388

Carla Wonder-McDowell, M.Ed.
Carla Wonder-McDowell, M.Ed., Assistant Director, Curriculum
(801) 646-4192

Date Created: Dec. 5, 2007
USU IRB Approved: 12.17.2007
Approval terminates: 12.6.2008; Protocol #1940
IRB Password Protected per IRB Administrator

Appendix B

Aligned Treatment Instructional Curriculum Map

Open Court Scope and Sequence for 2nd Grade Intervention

Week	PA	Phonics	BLM Story	2nd Grade Decodable	1st Grade Core Decodable	1st Grade Practice Decodable	High Frequency Words		Six Minute Solution		Comprehension Story (Student Reader)	Vocabulary	Comprehension Strategy	Comprehension Skill
							First 100	2nd 100	Fluency	Passage				
Unit 1: Lesson 1	PA : IG pp. 322-339	Sounds: /ŭ/	p. 1		#5: Sam, Sam, Sam		a	big	p. 121	p. 260	A Story for Pam		Making Connections	Author's Purpose
		/h/			#6: Matt and Sam	#1: On a Mat	and	eat	p. 122	p. 261			Predicting	
		/m/			#7: A hat	#2: Tam Has Ham	are	where	p. 123 (BB)					
		/n/			#8: The map	#3: Pam and Hap	for		p. 124 (BB)					
		/p/					had		p. 125 (BE)					
		/a/					in		p. 126 (BE)					
		/t/					on							
		/ă/					the		p. 135	p. 264				
		/b/					was		p. 136	p. 265				
		/d/							p. 137-138 (BB)					
		/i/							p. 139-140 (BE)					
Unit 1: Lesson 2	PA : IG pp. 322-339	/k/ spelled c	p. 3		#9: Hip	#4: Tim Hit It	at	hand	p. 168		Story Time with Nick	wreck	Making Connections	Compare and Contrast
		/k/ spelled Ck			#10: Snap the Ant	#5: Nat	did		p. 127-128	p. 262		tacks	Predicting	
		/k/ spelled k			#11: Lil's Hat	#6: Pals	her		p. 130 (BB)	p. 263		destroyed		
		/l/			#12: A Mill on a Hill	#7: Pam's Hill	is		p. 131 (BB)					
		Review /ă/			#13: Nan's Family		it		p. 132-133 (BE)					
		Review /ă/			#14: Dan Spins	#8: Dad's Mitt	like							
					#19: Picnic		look							
					#20: Nat's Nap		she							
							to							
Unit 1: Lesson 3	PA : IG pp. 322-339	/f/ spelled f	p. 5	#1: Todd's Box	#15: The Spot	# 9: Tom and Pop	all	came			The Best Car Ever	button	Clarifying	Drawing Conclusions
		/g/			#16: Bob at Bat	#10: Bop!	get	tell				floating	Summarizing	
		/r/ spelled r			#17: The Cab	#11: Cal's Cap	he	went				wipers		
		/w/			#18: Sis the Cat	#12: The Snack	his					surprised		
		/hw/ spelled wh_				#13: Rick and Rob	no		p. 163-164					
		/ŏ/					of		p. 141-142	p. 266				
		/n/ spelled kn_							p. 144-145 (BB)	p. 267				
		/ks/ spelled Ck							p. 146-147 (BE)					
		Compound words												
Unit 1: Lesson 4	PA : IG pp. 322-339	/ŭ/	p. 7	#5: Fun for Pups	#21: Ron on the Run	#14: Ann Hunts for Nuts	go	around	p. 149-150	p. 268	The Lost Ring	thief	Clarifying	Making Inferences
				#16: The Best Lunch	#22: The Bug	#15: Stuck!			p. 152-153 (BB)	p. 269				
				#38: Phil and Fletch	#23: Sinbad the Pig				p. 154-155 (BE)					
				#35: Fox and the Grapes	#24: Jan and Jack	#16: Just Jam								
		/r/ spelled wr_		#33: Petting Zoo (Review)	#105: Little Wren's Surprise	#69: Thank-You Note	has	ask					Summarizing	
		/th/			#38: Beth's Bath	#30: Beth Gets a Snack	I	back	p. 161-162					
		/ch/			#41: Chuck's Chest	#32: Lunch on the Porch	my	me	p. 157-158					
		/sh/			#37: Trash	#29: Trish's Ship	not		p. 159-160					
		ch spelled Ctch			#42: Patch Gets the Ball	#33: Patch Helps	said							
		/f/ spelled ph			#108: A Photo for Fred	#92: A Phantom Frog	then							
		/ng/			#54: Hank the Crank	#44: Ding Dong	this		p. 165-166					
		Review short vowels					up							
		Antonyms					when							
							will							
Unit 1: Lesson 5	PA : IG pp. 322-339	/ar/	p. 9	#15: Mack and Nick	#43: Grab a Star	#34: At the Farm	be	help	p. 222-223		Meet Pat Cummings	army	Clarifying	Point of View
		/j/ spelled j		#6: Dinner for Hardtop	#24: Jan and Jack	#16: Just Jam	but	land				castle	Asking Questions	
		/j/ spelled Cdge		#23: Badger and the Drum	#25: The Badge	#17: Madge	could	large				imagine	Summarizing	
		/j/ spelled ge			#70: Gem Gets a Bath	#58:Marge's Barge	first	men				samples		
		/j/ spelled gi			#71: Magic Pages	#59: Gingerbread Magic	from							
		/y/ spelled y_			#56: The Stand	#46: Beth's Yak	him							
		/er/ spelled er			#47: Garden Sisters	#38: Chandler Gets Under	that		p. 224-225					
		/er/ spelled ir			#48: Whir and Stir	#39: Brenda and the Bird	them		p. 228-229					
		/er/ spelled ur			#49: A Blur with Fur	#40: Curt the Surfer			p. 230-231					
		/s/ spelled ci_			#61: A Stencil and a Pencil	#50: Cilla's Fun								
		/z/ spelled z			#32: Zack the One-Man Band	#24: Liz								
Unit 1: Lesson 6	PA : IG pp. 322-339	/ă/ spelled a	p. 11	#7: The Fake Snake	#58: Mason's Big Hat	#47: Mabel's Bread	each	good			Saved by a Wave	trail	Clarifying	Main Ideas and Details
		/ă/ spelled a_e			#59: Gull and Crane	#48: Monster Cake	out	most	p.192-193	p. 270-271		woods	Making Connections	
		/ă/ spelled ai_			#79: Craig Sails	#66: The Train,	were	name	p. 207				Predicting	
		/ă/ spelled _ay			#80: No Way	#67: A Gray Rainy Day	with	work	p. 208					
		/ă/ spelled oe			#60: Lance's Dragon	#49: Just Ten Cents								
		/v/ spelled v			#67: At the Vet	#55: Bev Travels								
		Contractions												
Unit 2: Lesson 1	PA : IG pp. 322-339	/ĕ/ spelled e	p. 13	#9: Dean's Team	#72: A Gift for Me	#60: No Regrets	can	any	p. 198		A Sweet Treat	cream	Predicting	Drawing Conclusions
		/ĕ/ spelled ea		#18: Beach Peach	#75: The Bee and the Deer	#62: I Can't Sleep	have	does	p. 199			berries	Clarifying	
		/ĕ/ spelled _y			#77: The City Bus	#64: Smith City Cubs Win	into	house	p. 200			custard	Summarizing	
		/ĕ/ spelled e_e			#73: Pete and Steve Compete	#61: The Play	made	little		p. 274		tasty		
		/ĕ/ spelled ea			#76: Dragons Don't Get Colds	#63: The Clean Kitchen	make	put		p. 275				
		/ĕ/ spelled _ie_			#78: Nellie and Charlie	#65: The Game Pieces	see	very						
		/z/ spelled _s			#34: Dogs and Cats	#26: Don and Jim	their	want						

Week	PA	Phonics	BLM Story	2nd Grade Decodable	1st Grade Core Decodable	1st Grade Practice Decodable	High Frequency Words		Six Minute Solution		Comprehension Story (Student Reader)	Vocabulary	Comprehension Strategy	Comprehension Skill
							First 100	2nd 100	Fluency	Passage				
		Plurals ending in y					they							
							you							
Unit 2: Lesson 2	PA : IG pp. 322-339	/ī/ spelled i	p. 15	#19: Night Sights	#62: The Pilot	#51: Brian's Spiders	by	here	p. 195		The Lion and the Mouse	grabbed	Asking Questions	Sequence
		/ī/ spelled i_e		#2: Mom's Strange Speaking (Review)	#63: Spice Cake	#52: Brice		just	p. 196			frightened	Clarifying	
		/ī/ spelled _ie		#3: Tracks in the Dirt (Review)	#64: Dean's Pies	#70: The Best Pie		must	p. 197			tiny	Predicting	
		/ī/ spelled _y			#83: Why, Bly?	#69: Sly and Ty		right	p. 220	p. 272		wide		
		/ī/ spelled igh			#81: The Opossum at Night	#68: City Lights at Night		new	p. 221	p. 273				
Unit 2: Lesson 3	PA : IG pp. 322-339	/ō/ spelled o	p. 17	#10: Heroes	#84: Bo and Mo	#53: Old Gold	if	away	p. 201		The Amazing Basket	amazing	Clarifying	Cause and Effect
		/ō/ spelled o_e			#85: The Cold Troll	#54: Simone Awoke	more	know	p. 202			bow	Asking Questions	
		/ō/ spelled _oe			#86: The Farmer and the Doe	#71: Joe and His	so	need	p. 203				Predicting	
		/ō/ spelled oa_			#86: Load the Boat	#72: Joan's Boat	some	say	p. 211					
		/ō/ spelled ow			#87: It Will Not Snow	#73: Sam and Dad Bowl	these		p. 212	p. 276				
		Synonyms					what			p. 277				
Unit 2: Lesson 4	PA : IG pp. 322-339	/ū/ spelled u_e	p. 19	#8: Nancy's Robot Tale	#88: Music	#56: Hubert's Bugle	call	home	p. 204		The Kind King	ruled	Clarifying	Sequence
				#12: The Blimp Crew	#89: Muse the Mule	#57: Pam is not Amused	many	play	p. 205			mule	Predicting	
		/ū/ spelled_ew		#20: Hugo Quinn of the Daily Tribune	#88: Mew, Mew	#74: Dad's Chair	there		p. 206			flew		
		/ū/ spelled _ue			#89: Who Will Rescue the Cat?	#75: Mark's Dream	time			p. 278		rude		
		/kw/ spelled qu_			#55: Quinn's Pond	#45: The Squirrel Plan	your			p. 279		rescue		
		Contractions												
Unit 2: Lesson 5	PA : IG pp. 322-339	/ōō/ spelled u	p. 21	#30: Alphabet Zoo	#95: Ruby Tells the Truth	#60: Ruth and Ruby	an	great	p. 218		The Truth About Whales	cruel	Summarizing	Inference
		/ōō/ spelled _ue			#92: Sue's Clues	#77: A Bluebird for Sue		through				beach	Clarifying	
		/ōō/ spelled u_e			#93: Flute Music	#78: What Tune?		too					Asking Questions	
		/ōō/ spelled _ew			#94: The TV Crew	#79: A Space Crew								
		/ōō/ spelled oo			#91: Leo the Lion	#76: Jayce Helps								
		Inflectional endings: drop final e												
Unit 2: Lesson 6	PA : IG pp. 322-339	Review short and long vowels	p. 23	#42: I'd Like			down	only	p. 194 & 197	p. 260-263	Gone Fishing	poles	Making Connections	Sequence
				#41: The King's Ring			one		p. 200 & 203	p. 264-267		pail	Asking Questions	
				#40: The Gray, Grim House					p. 206	p. 268-269			Clarifying	
Unit 2: Lesson 7	PA : IG pp. 322-339	Consonant blends and digraphs	p. 25	#17: Jack's Trip			than	found	p. 157 & 159		The Fox and the Crow	crow	Clarifying	Cause and Effect
								three	p. 161				Asking Questions	
								try	p. 166				Visualizing	
Unit 3: Lesson 1	PA : IG pp. 322-339	Review consonant blends and digraphs	p. 27				now	still	p. 171		Speaking of Animals	wise	Asking Questions	Compare and Contrast
		Prefixes un-, re-, dis-					water	off	p. 175			disappear	Clarifying	
								move	p. 178			reappear	Summarizing	
									p. 179-182			clam		
									p. 189-190			refuse		
Unit 3: Lesson 2	PA : IG pp. 322-339	/oo/ spelled oo	p. 29	#22: My Great Day	#96: Who Took My Book?	#61: The Best Cook	way	thing	p. 219		Hide-and-Seek Animals	enemies	Asking Questions	Drawing Conclusions
		Review of /oo/ and /ōō/ spelled oo					would		p. 218			fields	Making Connections	
													Summarizing	
Unit 3: Lesson 3	PA : IG pp. 322-339	/ow/ spelled ow	p. 31	#13: The Frowning Clown	#97: A Clown Comes to Town	#62: Maggy's Flower	Review Previously Taught Sightwords	show	p. 216		Name That Color	bellies	Clarifying	Cause and Effect
		/ow/ spelled ou_			#98: Max the Grouch	#63: Nicky Gets a Hit							Summarizing	
		/ō/ spelled _ow			#87: It Will Not Snow	#73: Sam and Dad Bowl							Making Connections	
Unit 3: Lesson 4	PA : IG pp. 322-339	/aw/ spelled aw	p. 33	#14: Claude the Tiger	#101: Grampa Likes to Draw	#65: Awful the Hawk	Review Previously Taught Sightwords	take	p. 217		The Hawk Who Played Ball	draw, sailed	Predicting	Facts and Opinions
		/aw/ spelled au_		#43: Silly Riddles	#100: Paul and the Crab	#64: Too Much Help						sailed	Asking Questions	
													Clarifying	
Unit 3: Lesson 5	PA : IG pp. 322-339	/oi/ spelled _oy	p. 35	#29: A Pig for a Pet (Review)	#104: Roy and Big Boy	#88: Joy's Jobs	Review Previously Taught Sightwords	boy	p. 214		How the Elephant Got a Trunk	coil	Asking Questions	Drawing Conclusions
		/oi/ spelled oi		#28: The Worst Birthday Ever (Review)	#103: The Choice	#67: Cooking Supper		why	p. 215			noisy	Making Connections	
									p. 214-216				Predicting	
Unit 3: Lesson 6	PA : IG pp. 322-339	Review /oi/, /aw/, /ow/, /oo/, /ōō/	p. 37	#24: The High Street Parade			day	kind	p. 218-219		Frogs and Toads	flatter	Clarifying	Main Idea and Details
		Multisyllabic words		#26: The Best Thing to Be				live				pond	Visualizing	
													Summarizing	
Unit 4: Lesson 1	A : IG pp. 322-339	Regular and irregular plurals	p. 39	#4: The Bread Shop			find	animal	p. 129		Where Did the Dinosaurs Go?	roamed	Asking Questions	Sequence
		Review short vowels		#11: The Wise Monkey			over		p. 143			germs	Clarifying	
		Inflectional endings: double final consonant							p. 148				Making Connections	
		Comparative word forms							p. 151				Summarizing	

Week	PA	Phonics	BLM Story	2nd Grade Decodable	1st Grade Core Decodable	1st Grade Practice Decodable	High Frequency Words		Six Minute Solution		Comprehension Story (Student Reader)	Vocabulary	Comprehension Strategy	Comprehension Skill
							First 100	2nd 100	Fluency	Passage				
	P.	Multisyllabic words												
Unit 4: Lesson 2	PA : IG pp. 322-339	Unstressed endings: -il, -al, -le	p. 41				Review Previously Taught Sightwords	should	p. 192		The Party	wondered	Making Connections	Fact and Opinion
		/ā/ spelled a			#58: Mason's Big Hat	#47: Mabel's Bread		place	p. 193				Asking Questions	
		/ā/ spelled a_e			#59: Gull and Crane	#48: Monster Cake		mean	p. 207				Visualizing	
		/ā/ spelled ai_			#79: Craig Sails	#66: The Train			p. 208					
		/ā/ spelled _ey			#80: No Way	#67: A Gray Rainy Day				p. 270				
		/ā/ spelled eigh								p. 271				
		/ow/ spelled ou_			#97: A Clown Comes to Town	#82: Maggy's Flower			p. 216					
		/ow/ spelled ow			#98: Mex the Grouch	#83: Nicky Gets a Hit								
Unit 4: Lesson 3	PA : IG pp. 322-339	Suffixes -ous, -tion, -ure, -sion	p. 43	#27: Claire's Secret (Review)	#117: Tony and Don Go West	#97: The Skipper	may	give			Apatosaurus, the Gentle Giant	cautious	Predicting	Main Idea and Details
		Vowel + r spellings						change	p. 222 & 224			gentle	Summarizing	
									p. 226 & 228			protection	Making Connections	
									p. 230			scientist	Clarifying	
Unit 4: Lesson 4	PA : IG pp. 322-339	Compound words	p. 45	#37: What Will We Do About Jack?			Review Previously Taught Sightwords	study			Digging Up Dinosaurs	fossil	Clarifying	Cause and Effect
		Multiple-meaning words		#34: A Day at the Paper Plane Factory (Review)								layers	Making Connections	
		Inflectional endings										remains	Summarizing	
Unit 5: Lesson 1	PA : IG pp. 322-339	/ē/ spelled e	p. 47		#72: A Gift for Me	#60: No Regrets	Review Previously Taught Sightwords	Review Previously Taught Sightwords	p. 198		Up a Tree	suddenly	Making Connections	Point of View
		/ē/ spelled ee			#75: The Bee and the D	#62: I Can't Sleep			p. 199			trotted	Predicting	
		/ē/ spelled e_e			#73: Pete and Steve Compete	#61: The Play			p. 200			branch	Visualizing	
		/ē/ spelled ea			#76: Dragons Don't Get Colds	#63: The Clean Kitchen				p. 274		brave		
		/ē/ spelled _y			#77: The City Bus	#64: Smith City Cube Win				p. 275				
		/ē/ spelled _ie_			#78: Nellie and Charlie	#65: The Game Pieces								
		Inflectional endings with double final consonant												
Unit 5: Lesson 2	PA : IG pp. 322-339	/ū/ spelled u	p. 49		#68: Music	#56: Hubert's Bugle	Review Previously Taught Sightwords	page	p. 204		The Dragon Who Was Afraid	harm	Clarifying	Drawing Conclusions
		/ū/ spelled u_e			#69: Muse the Mule	#57: Pam is not Amused			p. 205				Making Connections	
		/ū/ spelled _ew			#88: Mew, Mew	#74: Dad's Chair			p. 206				Summarizing	
		/ū/ spelled _ue			#89: Who Will Rescue the Cat?	#75: Mark's Dream			p. 218	p. 278				
		Inflectional endings drop final e when adding -ing								p. 279				
Unit 5: Lesson 3	PA : IG pp. 322-339	/ō/ spelled o	p. 51	#21: The Overholts	#64: Bo and Mo	#53: Old Gold	Review Previously Taught Sightwords	mother	p. 201		The World's Bravest Cowboy	wagon	Asking Questions	Cause and Effect
		/ō/ spelled o_e			#65: The Cold Troll	#54: Simone Awoke		world	p. 202			cyclone	Clarifying	
		/ō/ spelled _oe			#85: The Farmer and the Doe	#71: Joe and His			p. 203				Making Connections	
		/ō/ spelled _ow			#87: It Will Not Snow	#73: Sam and Dad Bowl			p. 211				Summarizing	
		/ō/ spelled oa_			#66: Load the Boat	#72: Joan's Boat			p. 212	p. 276				
		Homophones								p. 277				
Unit 5: Lesson 4	PA : IG pp. 322-339	/ar/ spelled ar	p. 53		#43: Grab a Star	#34: At the Farm	long	after	p. 222		Helen Keller: A Woman of Courage	courage	Clarifying	Main Ideas and Details
		Contractions					people	man	p. 223			graduated	Asking Questions	
							use	America				goals	Summarizing	
							who							
Unit 5: Lesson 5	PA : IG pp. 322-339	/er/ spelled er	p. 55		#47: Garden Sisters	#38: Chandler Gets Under	come	Review Previously Taught Sightwords	p. 224-225		A Friend in Need	introduce	Asking Questions	Sequence
		/er/ spelled ur			#49: A Blur with Fur	#40: Curt the Surfer			p. 230-231				Making Connections	
		/er/ spelled ir			#48: Whir and Stir	#39: Brenda and the Bird			p. 228-229				Predicting	
		Dipthongs											Summarizing	
		Contractions												
Unit 5: Lesson 6	PA : IG pp. 322-339	Long vowels	p. 57				Review Previously Taught Sightwords	Review Previously Taught Sightwords	p. 193	p. 271	Faith as a Friend		Clarifying	Author's Purpose
		/a/ spelled ci_			#60: Lance's Dragon	#49: Just Ten Cents			p. 196	p. 272			Making Connections	
		/a/ spelled ce			#61: A Stencil and a Pencil	#50: Cilla's Fun			p. 198	p. 275			Predicting	
		/a/ spelled cy							p. 202	p. 277			Summarizing	
		/j/ spelled j			#24: Jan and Jack	#16: Just Jam			p. 204	p. 279				
		/j/ spelled ge			#70: Gem Gets a Bath	#58:Marge's Barge								
		/j/ spelled gi_			#71: Magic Pages	#59: Gingerbread Magic								
Unit 6: Lesson 1	PA : IG pp. 322-339	word roots	p. 59		#71: Magic Pages	#59: Gingerbread Magic	Review Previously Taught Sightwords	even			The Jamestown Settlement	settlers	Asking Questions	Classifying and Categorizing
		Affixes										suffered	Clarifying	
		/z/ spelled z										pleasant	Making Connections	
		/z/ spelled _s											Summarizing	
Unit 6: Lesson 2	PA : IG pp. 322-339	Homophones: position words	p. 61				about	letter	p. 195		Aunt Marla	country	Summarizing	Cause and Effect
		/ī/ spelled i			#62: The Pilot	#51: Brian's Spiders	as		p. 196			creamy	Clarifying	
		/ī/ spelled i_e			#83: Spice Cake	#52: Brice			p. 197			citizen	Making Connections	
		/ī/ spelled igh			#81: The Opossum at Night	#68: City Lights at Night			p. 220					
		/ī/ spelled _y			#83: Why, Bly?	#69: Sly and Ty			p. 221					
		/ī/ spelled _ie			#84: Dean's Pies	#70: The Best Pie				p. 272				
		Irregular past-tense verbs								p. 273				
[illegible]	pp. [illegible]	/r/ spelled wr_	p. 63				two	also			The Secret Railroad	shack	Asking Questions	Author's Purpose

Week	PA	Phonics	BLM Story	2nd Grade Decodable	1st Grade Core Decodable	1st Grade Practice Decodable	High Frequency Words		Six Minute Solution		Comprehension Story (Student Reader)	Vocabulary	Comprehension Strategy	Comprehension Skill
							First 100	2nd 100	Fluency	Passage				
Unit 6: Lesson 4	PA : IG 322-34	Contractions					we	different				conductor	Clarifying	
							write	our				feedom	Making Connections	
Unit 6: Lesson 4	PA : IG pp. 322-339	Regular and irregular plurals	p. 65	#36: The Train Trip			or	Review Previously Taught Sightwords	p. 218		Welcome to Liberty	statue	Asking Questions	Sequence
		/ōō/ spelled oo		#44: The Blue Tie	#91: Leo the Lion	#76: Jayce Helps						robe	Clarifying	
		/ōō/ spelled _ew			#94: The TV Crew	#79: A Space Crew						copper	Making Connections	
		/ōō/ spelled _ue			#92: Sue's Clues	#77: A Bluebird for Sue						immigrants	Summarizing	
		/ōō/ spelled u_e			#93: Flute Music	#78: What Tune?						dock		
		/ōō/ spelled u			#95: Ruby Tells the Truth	#80: Ruth and Ruby						fort		
Unit 6: Lesson 5	PA : IG pp. 322-339	/ər/ spelled ar	p. 67		#43: Grab a Star	#34: At the Farm	Review Previously Taught Sightwords	sound	p. 222-223		The Big, Shiny Pot	scarves	Asking Questions	Making Inferences
		/ər/ spelled er			#47: Garden Sisters	#38: Chandler Gets Under			p. 224-225			violin	Clarifying	
		/ər/ spelled ur			#49: A Blur with Fur	#40: Curt the Surfer			p. 230-231				Making Connections	
		/ər/ spelled ir			#48: Whir and Stir	#39: Brenda and the Bird			p. 228-229				Summarizing	
		/aw/ spelled ough			#112: Bob Thought	#94: Thoughtful Gifts								
		/aw/ spelled augh			#111: Naught Max	#93: The Spider's Daughter								
		/aw/ spelled all												
		/aw/ spelled al												
Unit 6: Lesson 6	PA : IG pp. 322-339	/k/ spelled c	p. 69	#32: Did You Know?	#17: The Cab	#11: Cal's Cap	been	again			A New Name	calm	Asking Questions	Cause and Effect
		/k/ spelled k		#39: Book Are No Fun!	#53: Kim's Trip	#43: Breakfast In Bed		because					Making Connections	
		/k/ spelled _ck		#31: Mee-Ling and the Dragon (Review)	#19: Picnic	#12: The Snack		year	p. 168				Predicting	
		Multisyllabic words											Visualizing	
		Short vowels							p. 156					
Unit 6: Lesson 7	PA : IG pp. 322-339	Adverbs with -ly	p. 71				Review Previously Taught Sightwords	Review Previously Taught Sightwords			The Fourth of July	celebrate	Asking Questions	Facts and Opinion
		Compound words											Clarifying	
		Consonant blends							p. 179 (bl)				Making Connections	
									p. 172 (br)					
									p. 186 (ck)					
									p. 180 (cl)					
									p. 181 (fl)					
									p. 182 (gl)					
									p. 167 (sl)					
									p. 190 (st)					
									p. 178 (tr)					
Unit 6: Lesson	PA : IG pp. 322-339	Antonyms	p. 73				do	such			Cricket	cricket	Clarifying	Point of View
		Adjectives with long-vowel spellings											Making Connections	
													Asking Questions	

Appendix C

Aligned Instructional Lesson Plan

Aligned Instructional Lesson Plan

For Week of _____

Decoding Practice, Introduction of Vocabulary (15 Minutes) *Times in each sub area are only suggested

Day 1	Day 2	Day 3	Day 4	Day 5
Sound Review	Sound Review	Sound Review	Sound Review	Sound Review
Phonemic Awareness (<2 min.)	Phonemic Awareness (<2 min.)	Phonemic Awareness (<2 min.)	Phonemic Awareness (<2 min.)	Phonemic Awareness (<2 min.)
IG (pp. 322-339), Lesson # _____ 1st Pt. 1 LC , Lesson # _____	IG (pp. 322-339), Lesson # _____ 1st Pt. 1 LC , Lesson # _____	IG (pp. 322-339), Lesson # _____ 1st Pt. 1 LC , Lesson # _____	IG (pp. 322-339), Lesson # _____ 1st Pt. 1 LC , Lesson # _____	IG (pp. 322-339), Lesson # _____ 1st Pt. 1 LC , Lesson # _____
Sight Words (<2 min)	Sight Words (<2 min)	Sight Words (<2 min)	Sight Words (<2 min)	Sight Words (<2 min)
Write words on white board Yuck! Game Flash Card Review Lines of Practice	Write words on white board Yuck! Game Flash Card Review Lines of Practice	Write words on white board Yuck! Game Flash Card Review Lines of Practice	Write words on white board Yuck! Game Flash Card Review Lines of Practice	Write words on white board Yuck! Game Flash Card Review Lines of Practice
Blending (10-15 words, 4 min.)	Blending (10-15 words, 4 min.)	Blending (10-15 words, 4 min.)	Blending (10-15 words, 4 min.)	Blending (10-15 words, 4 min.)
p. _____ Line #_____ Sentence #_____	p. _____ Line #_____ Sentence #_____	p. _____ Line #_____ Sentence #_____	p. _____ Line #_____ Sentence #_____	p. _____ Line #_____ Sentence #_____
Dictation (3 words, 2 min.)	Dictation (3 words, 2 min.)	Dictation (3 words, 2 min.)	Dictation (3 words, 2 min.)	Dictation (3 words, 2 min.)
p. _____ Line #_____ Sentence #_____	p. _____ Line #_____ Sentence #_____	p. _____ Line #_____ Sentence #_____	p. _____ Line #_____ Sentence #_____	p. _____ Line #_____ Sentence #_____
Fluency Practice (4 min.)	Fluency Practice (4 min.)	Fluency Practice (4 min.)	Fluency Practice (4 min.)	Fluency Practice (4 min.)
SMS p. _____ Toughie Chart Lines of Practice	SMS p. _____ Toughie Chart Lines of Practice	SMS p. _____ Toughie Chart Lines of Practice	SMS p. _____ Toughie Chart Lines of Practice	SMS p. _____ Toughie Chart Lines of Practice
Vocabulary	Vocabulary	Vocabulary	Vocabulary	Vocabulary

Decoding in Connected Text, Comprehension (15 Minutes)

Decodable	Comprehension	Decodable	Comprehension	Decodable
BLM - p. _____ 2nd Grade Decodable #_____ 1st Grade CD # _____ 1st Grade PD # _____ ●First Read ●Second Read ●Repeated Readings	IG Strategy Focus _____ IG Comprehension Story _____ SMS # _____ ●First Read ●Second Read ●Repeated Readings	BLM - p. _____ 2nd Grade Decodable #_____ 1st Grade CD # _____ 1st Grade PD # _____ ●First Read ●Second Read ●Repeated Readings	IG Skill Focus _____ IG Comprehension Story _____ SMS # _____ ●First Read ●Second Read ●Repeated Readings	BLM - p. _____ 2nd Grade Decodable #_____ 1st Grade CD # _____ 1st Grade PD # _____ ●First Read ●Second Read ●Repeated Readings

Appendix D

Fidelity Checklists

ALIGNED TREATMENT FIDELITY CHECKLIST

Specialist Name _____ Date of Observation _____

Observer _____ Time of Observation _____

ALIGNED INSTRUCTION ATTRIBUTE	Evident 2	Emerging 1	Not Evident 0
1. Aligned Curriculum Is Being Taught			
2. Teacher provides 30 minutes of small group instruction to each group every day, 15 minutes decoding instruction, 15 minutes story reading (including vocabulary & comprehension)			
3. At the start of each lesson, teacher spends 2-6 minutes reviewing sound cards specified in the Intervention Guide, reviewing phonemic awareness (if students need PA) and focusing on new sounds and words and those that are more difficult for the students			
4. Students are reading from materials appropriate to support instructional intent in small group instruction (e.g., 2nd grade decodable text, first grade decodable/practice decodable books, Six Minute Solution, Intervention Black Line masters, Toughie Charts, sentence strips, etc.)			
5. Repetitions are being given using a variety of practice formats, ranging from choral turns, individual turns, working in pairs or small groups.			
6. Students read decodable text several times throughout the lesson.			
7. Teacher reviews any difficult skills (any skill a student performs incorrectly) at least 3 times within the 30 minute lesson.			
8. Teacher uses the model-guide-test strategy when introducing new skills, and immediately following a student error			
9. During the lesson, teacher instructs and provides practice for skill categories detailed on the lesson plan, engaging students in a variety of activities to provide "mores", focusing on moving students through the scope and sequence of skills briskly and at a pace of mastery			
10. Teacher sets clear expectations for behavior at the beginning of the lesson and maintains the expectations throughout the lesson			
TOTALS			
GRAND TOTAL _____/20 PERCENT:			

READ WELL FIDELITY CHECKLIST

Specialist Name _____ Date of Observation _____

Observer _____ Time of Observation _____

READ WELL ATTRIBUTE	Evident 2	Emerging 1	Not Evident 0
1. Read Well Is Being Taught			
2. Teacher provides 30 minutes of small group instruction to each group, 15 minutes decoding instruction, 15 minutes story reading (including comprehension & vocabulary)			
3. At the start of each lesson, teacher spends 2-4 minutes using sound and word cards from the units specified in the Teacher's Guide			
4. In the warm-up review, focus is on the new sounds and words and those that are more difficult for the students			
5. During the lesson, teacher instructs and guides practice in each section activity (e.g., Stretch and Shrink, Smooth and Bumpy Blending, Sounding out Smoothly, Accuracy and Fluency, Tricky Words) several times-the teacher should not proceed with the lesson without repeating section material more than once.			
6. Repetitions are being done using a variety of practice formats, ranging from choral turns, individual turns, working in pairs or small groups.			
7. Students read each solo or duet story in the Storybook several times throughout the lesson.			
8. Teacher reviews any difficult skills (any skill a student performs incorrectly) at least 3 times within the 30 minute lesson.			
9. Teacher uses the model-guide-test strategy when introducing new skills, and immediately following a student error			
10. Teacher sets clear expectations for behavior at the beginning of the lesson and maintains the expectations throughout the lesson			
TOTALS			
GRAND TOTAL _____/20 PERCENT:			

VITA

CARLA WONDER-McDOWELL

Carla Wonder-McDowell was born in Salt Lake City, Utah, on July 12, 1959, the daughter of Carl and Marie Van Wensveen. After completing her work at Granite High School, Salt Lake City, Utah she entered the University of Utah where she completed a Bachelor of Science degree in Early Childhood Education in 1980. During the next 10 years she taught first grade in the Granite School District. In 1985, as a single parent, Carla completed a Master of Education degree at the University of Utah. In 1990, Carla returned to the University of Utah to complete an Educational Administration Certification program. That same year she began a ten-year career as an elementary principal in the Granite School District, working in Title I schools. In 2000, Carla was invited into the District Offices to share her successes with students at-risk of reading failure. By 2007, she was the Associate Director of Elementary Literacy, overseeing the literacy instruction of over 35,000 elementary school students. In the January 2004, she entered the Graduate School of Utah State University in Logan, Utah.

Permanent Address: 4186 South Diana Way, Salt Lake City, Utah 84124